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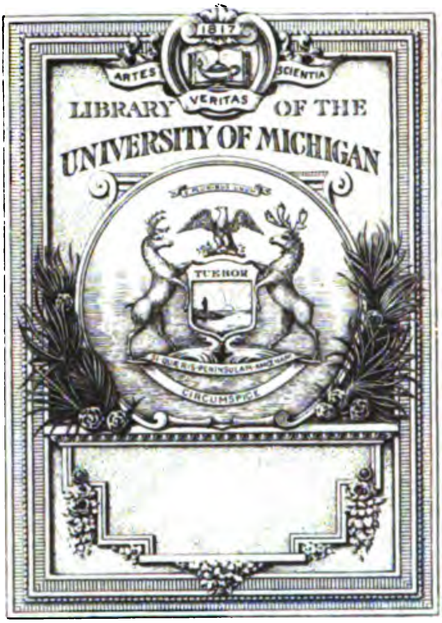
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OF THE

ASSEMBLY

OF THE

STATE OF NEW-YORK,

SEVENTY-FIFTH SESSION.

1852.

VOLUME 6.

No. 126.

ALBANY:
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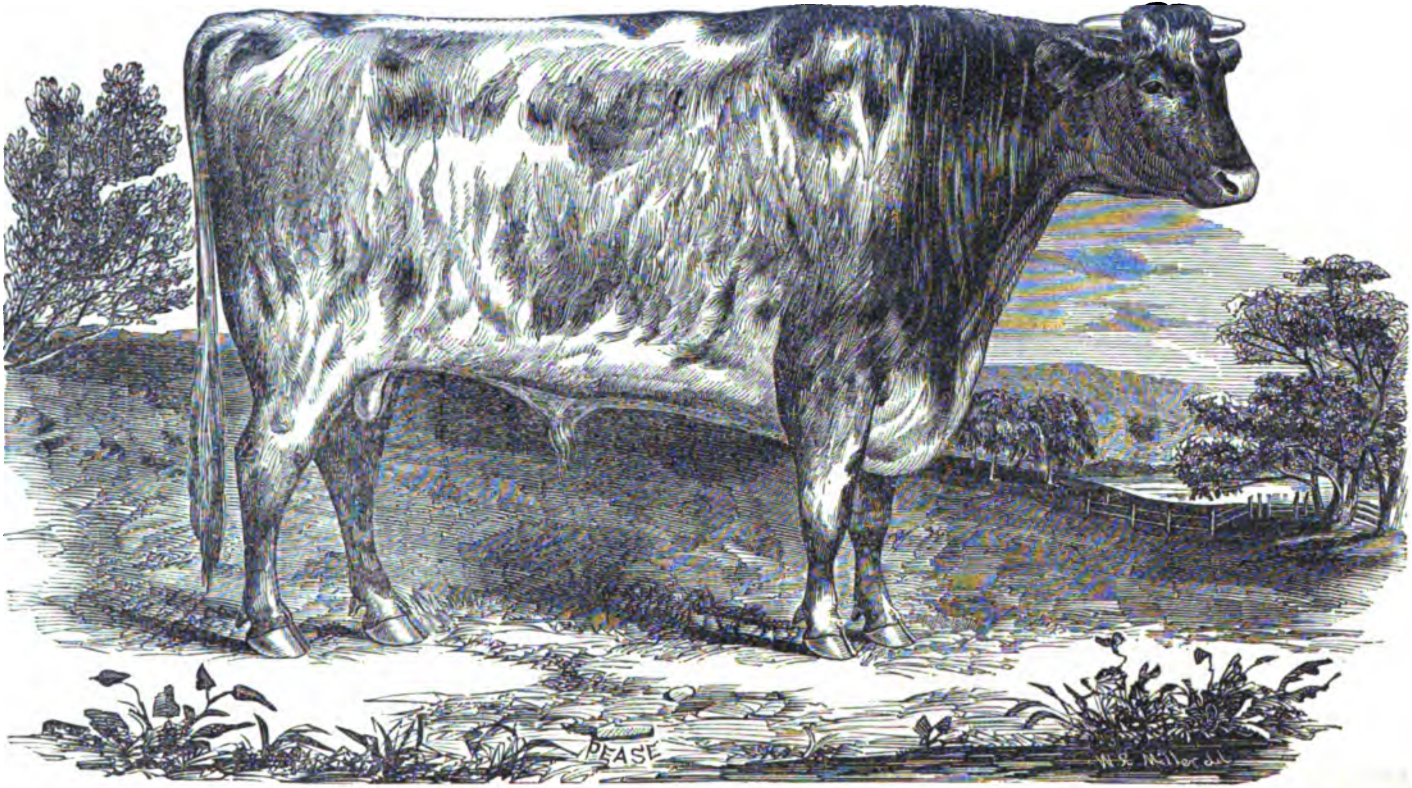
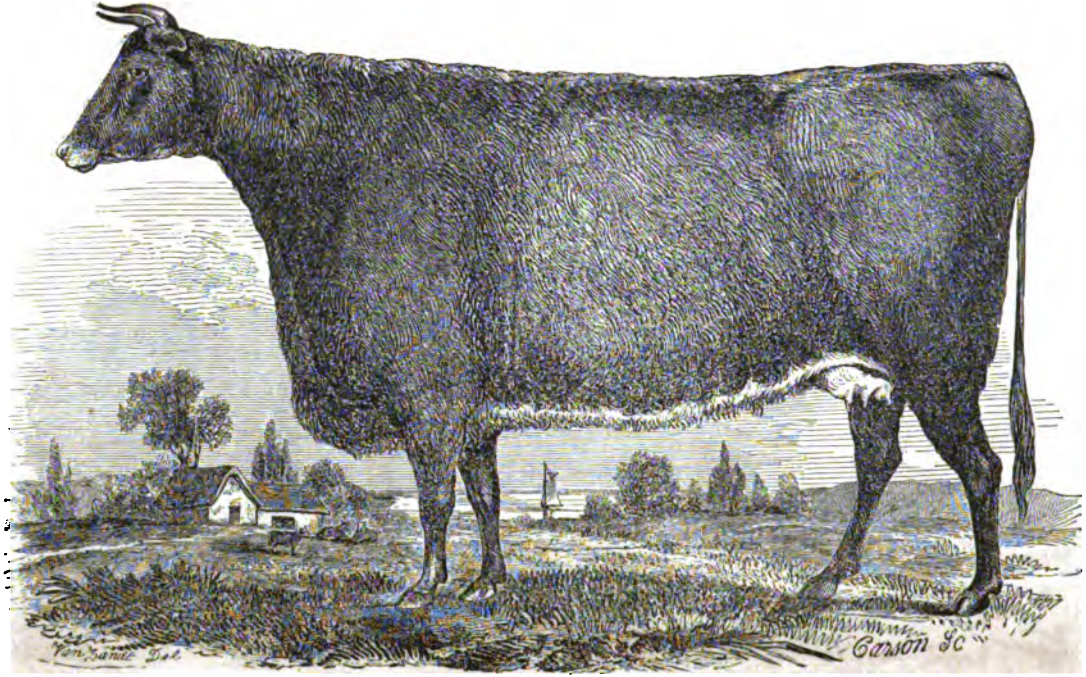


LORD ERYHOLME—Short Horn Bull, two years old. The property of **Lewis G. Morris**, Mount Fordham, N. Y., for which the ***First Prize*****, $20**, was awarded at the Rochester Show, 1851. **Pedigree**—Lord Eryholme, roan; calved 10th January, 1849; got by Earl Stanhope (5966); dam (Miss Stanley) by Cotherstone, (6903); g. dam (Lady Stanley) by Lord Stanley, (4269). See *Coates' Herd Book, vol.* 7, *page* 420, for further pedigree.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"**ESTERVILLE**"—Short Horn Cow, the property of GEORGE VAIL, Troy, (bred by E. P. Prentice, Mount Hope); winner of the *First Prize*, $25, at Albany, 1850.

UNIV. OF

TRANSACTIONS

OF THE

N. Y. State Agricultural Society,

WITH AN

ABSTRACT OF THE PROCEEDINGS

OF THE

COUNTY AGRICULTURAL SOCIETIES,

WITH

B. P. JOHNSON'S REPORT

ON THE

INDUSTRIAL EXHIBITION, LONDON, 1851.

VOL. XI.—1851.

ALBANY:
CHARLES VAN BENTHUYSEN, PRINTER TO THE LEGISLATURE,
407 Broadway.
....
1852.

NOTICE.

In presenting the Eleventh Volume of the Transactions of the Society to the farmers of the State, it is believed that it will be found to contain matter of deep interest to all. That there is progress making in the different branches of Agriculture in our State, cannot be questioned. The volume which is now presented contains the history of what is doing, and suggestions for further advancement.

There are valuable papers contained in this volume from practical men, which cannot fail to arrest the attention of farmers. The results of drainage, so fully and clearly set forth, will have an effect upon the practice of our farmers throughout the State, and will lead to vast improvement.

The increased interest which is manifested in the subject of Agriculture is most gratifying—and the demand which is made for the Transactions of the State Society, shows that the operations of the farmers of New-York are interesting the people of our own country not only, but those of distant lands. The report of the undersigned, to his Excellency Gov. Hunt, on the Industrial Exhibition in England, is annexed to the Transactions of the Society pursuant to a resolution of the Legislature.

The subscriber has been greatly aided in the preparation of this volume by gentlemen in different parts of the State, and it is submitted to the public, with an earnest desire that it may contribute to the advancement of one of the greatest interests of our State and nation, that of Agriculture.

B. P. JOHNSON,

Agricultural Rooms, March, 1852. *Secretary.*

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CONSTITUTION OF THE NEW-YORK STATE AGRICULTURAL SOCIETY.

The style of this Society shall be "The New-York State Agricultural Society." Its objects shall be to improve the condition of Agriculture, Horticulture, and the Household arts.

SEC. 1. The Society shall consist of such citizens of the State as shall signify in writing, their wish to become members, and shall pay on subscribing not less than one dollar, and annually thereafter one dollar, and also of Honorary and Corresponding members.

The Presidents of County Agricultural Societies, or a delegate from each, shall ex officio be members of this Society.

The payment of ten dollars or more shall constitute a member for life, and exempt the donor from annual contributions.

SEC. 2. The officers of the Society shall consist of a President, eight Vice Presidents, one to be located in each Judicial District; a Recording Secretary, a Corresponding Secretary, a Treasurer, an Executive Committee, to consist of the officers above named, and five additional members, and five of the Ex-Presidents shall be ex officio members of the Executive Committee, and these five shall consist of the five Ex-Presidents whose term of office has last expired, of whom three shall constitute a quorum; and that the Ex-Presidents of the Society, not members of the Executive Committee, shall constitute a Board of Councillors, to which may be referred, for consultation and advice, all questions that may from time to time arise, and in the decision of which the Society may in any manner be interested; and a General Committee, the members of which shall be located in the several counties, and be equal to the representations in the House of Assembly.

SEC. 3. The Recording Secretary shall keep the minutes of the Society. The Corresponding Secretary shall carry on the correspondence with other Societies, with individuals and with the general committee, in the furtherance of the objects of the Society.

The Treasurer shall keep the funds of the Society, and disburse them on the order of the President or a Vice President, countersigned by the Recording Secretary, and shall make a report of the receipts and expenditures at the annual meeting in January.

The Executive Committee shall take charge of and distribute or preserve all seeds, plants, books, models, &c., which may be transmitted to the Society; and shall have also the charge of all communications designed or calculated for publication, and so far as they may deem expedient, shall collect, arrange and publish the same in such manner and form as they shall deem best calculated to promote the objects of the Society.

The General Committee are charged with the interests of the Society in the counties in which they shall respectively reside, and will constitute a medium of communication between the Executive Committee and the remote members of the Society.

SEC. 4. There shall be an annual meeting of the Society on the second Wednesday of February, in the city of Albany, at which time all the officers shall be elected by a plurality of votes and by ballot, with the exception of the General Committee for the counties, which may be appointed by the Executive Committee, who shall have power to fill any vacancies which may occur in the officers of the Society during the year. Extra meetings may be convoked by the Executive committee. Fifteen members shall be a quorum for the transaction of business.

SEC. 5. The Society shall hold an Annual Cattle Show and Fair at such time and place as shall be designated by the Executive Committee.

SEC. 6. This Constitution may be amended by a vote of two-thirds of the members attending any annual meeting.

STATE AGRICULTURAL ROOMS,
January, 1852.

I certify the above to be a true copy of the Constitution of the New-York State Agricultural Society.

B. P. JOHNSON,
Cor. Secretary.

State of New-York.

No. 126.

IN ASSEMBLY, MAR. 22, 1852.

COMMUNICATION

From the Corresponding Secretary of the New-York State Agricultural Society.

State Agricultural Rooms,
March, 20th, 1852.

To the Hon. Jonas C. Heartt,
Speaker of the Assembly:

In pursuance of the acts of the Legislature for the promotion of Agriculture, I present herewith the annual report of the New-York State Agricultural Society, with the proceedings of the Executive committee, and abstracts of the reports of county societies for 1851.

Very respectfully yours,

B. P. JOHNSON,
Cor. Secretary.

TRANSACTIONS

OF THE

New-York State Agricultural Society:

REPORT OF THE EXECUTIVE COMMITTEE FOR 1851.

TO THE LEGISLATURE OF THE STATE OF NEW-YORK:

The Executive Committee of the New-York State Agricultural Society, in pursuance of the act for the encouragement of Agriculture,

Respectfully Report:

That the progress which has been made during the past year in the departments of Agriculture, Horticulture and the Mechanic Arts, will be most fully exhibited in the proceedings of the State and county Associations which are herewith submitted. It gives the Committee great pleasure to be enabled to assure the Honorable the Legislature, that the evidences of advancement and progress in the Agriculture of our State are of the most cheering as well as encouraging character. At no former period in the history of the Society has there been such satisfactory evidence afforded of the beneficial effects of the application of science to this important branch of industry; and in a great variety of instances the results have been so manifest as to secure the approbation of many of our intelligent farmers, who previously had been slow in acknowledging the importance of its application to the great interest to which they had devoted their lives.

The attention which has been given to improved systems of husbandry in various parts of the State, has, we are assured in almost every instance, proved advantageous to the farmer; and as more care and attention is given to the management of the farm in all its details, we shall expect a continued advancement.

In the reports which were published in our Transactions for 1850, on the management of farms, will be found many most valuable suggestions, deserving careful consideration. We desire to call particular attention to the report of Mr. D. D. T. More of his farm near the city of Albany, on the sandy lands which for years have been considered of little value. The means of reclaiming this land and securing results equal to our most favored farms in other parts of the State, are so fully and clearly set forth as to elicit the approbation of practical, intelligent farmers in every portion of our State, not only, but also in various portions of the United States. We are fully of the opinion that the experiments made by Mr. More, with his successful results, will give an increased value to this kind of land throughout our State; in fact, we have assurances that sales have been made based mainly upon these truly gratifying results, showing a very large increase of price over those of previous years. It is most encouraging, when we can thus directly trace the beneficial results of the efforts which are making by the Society to spread before the farmers of the State and the Union, the improvements which are being made in agriculture. We have never had presented in so clear and satisfactory a manner the whole process of reclaiming light soils, as is given in this report, and feel assured that it will be considered as among the most valuable contributions we have been permitted to make to the great cause of Agriculture. The other farm reports of Gen. Roswell Harmon, and E. M. Bradley, are also very valuable and important documents, which have elicited attention from various directions.

A cursory glance even, at the present state of farm management in our State, will satisfy the most incredulous that our progess is onward. In every county, and we might perhaps say in almost every town, the evidences are afforded of very great improvement in the manner in which the operations of the farm are now conducted; and from the returns received from the county Societies, we have the most abundant evidence that *wherever* improved systems of husbandry have been adopted, *there* farms bear a higher money value: This is one of the most gratifying results, evidencing as it does, that our farmers are turning their attention to the improvements which have been brought to their aid, and that those who are desirous of making investments are giving their preferences to those who have thus directed their energies. We have no doubt that such will ever be the result. That there is an advance in our real estate throughout the State we believe no one can doubt; and that the increased value of our farms has been greatly aided by the efforts made by the State and County Agricultural Associations; and that this will continue to be the case as our improvements shall be more fully carried out, we think must be apparent to every reflecting and discriminating mind.

The operations of the Society, during the past year, have been generally of a character, as those of former years, with a continued effort, however, to improve, whenever opportunity presented. Our Transactions, which were presented at the last session of the Legislature, were prepared with much care, and the anticipations which were indulged as to their adaptation to the wants of the age have been fully realized. The Survey of the county of Seneca, which appears in that report, has elicited, from the friends of Agriculture, in our own State, as well as from other States, in our Union, the most decided approbation—and many of the other articles have been already extensively copied, and the whole work is referred to as of a character well adapted to the wants of the age, and which must improve and advance the Agricultural interests of our own State, and of the country at large.

It may not be inappropriate, in connexion, to notice in what estimation our Transactions are held abroad, by gentlemen who are competent to judge of their value, to the great Agricultural interest. While in England, the past summer, the Secretary distributed several copies of the volume of 1849, among editors of Agricultural Journals, and gentlemen interested in the subject of Agriculture. The editor of one of the Agricultural Journals of Great Britain thus alludes to the volume. "We are indebted to the politeness of Mr. Johnson, Corresponding Secretary of the New-York State Agricultural Society, for a copy of the Transactions for 1846—a volume of near 1,000 pages. Of course, in such a volume, there must be much matter of an ephemeral kind, though we are *bound to admit* that, as compared with the "Transactions" of many of our European Societies, there is a greater amount of *really valuable matter* worthy of a place amongst the scientific literature of the country, than is general."

Expressions of a like character, from gentlemen abroad were often made, and they are alluded to here solely, for the purpose of showing the importance of the operations of our Society, and the other associations of the State, embodied, as they are, annnally, in the Transactions published by the Legislature.

While absent, the Secretary had an opportunity of presenting the Transactions of the Society to the Centrale Nationale Agricultural Society of France—and as the account of the proceedings of the Society have a bearing upon the importance of our efforts, as a Society, we give them briefly.

MONS. CHEVREILLE, Vice President in the Chair, MR. PAYEN, Secretary.

Paris, July, 1851.

Having been introduced by Count KERGOLEY, one of the Jurors at the exhibition in London, from France, MR. JOHNSON remarked, on presenting the Transactions, that it gave him very great pleasure to meet this distinguished body, who had done so much for the advancement of the science of Agriculture. The publications of the Society, which had been forwarded to ours, were highly appreciated and would aid much in the advancement of the best interests of our country. As a slight return for the very valuable donations we had received, we had presented the Transactions of our Society, which, though young in comparison with theirs, was making exertions to diffuse as widely as possible, information on Agriculture, Horticulture, and the arts connected with them. I alluded briefly, to the patronage bestowed by the State upon the Society in its annual contribution of funds and the publication of the Transactions for distribution, and gave an account of our annual exhibitions and the manner in which our Transactions were prepared.

I presented them with the report of the trial of plows made by the Society, and a description of the Virginia Grain Reaper of McCormick, to which had been awarded the *Council Medal* of the Exhibition, the only *single* implement, I believe, to which that honor had been given. In returning my thanks for the kindness which had been extended to me on behalf of the State and Society which I represented; I expressed the hope that the intercourse which had been so happily commenced between our Societies would be continued to our mutual advantage and to the best interests of our respective countries. We remembered with grateful feelings the assistance received from France at an early period in our history, in our struggles for independence, and that we should ever hold their country in grateful remembrance, and our desire was, that the intercourse should continue of the most friendly character, as hitherto, and that prosperity and success might attend the efforts of the French nation in its advancement in all that could contribute to a nation's welfare, honor and glory.

My remarks were translated by Mr. Payen, and the Vice President made some very complimentary remarks in regard to our Society and its Transactions, and of our efforts in the cause of Agriculture. He was followed by Mr. Milne Edwards, in some very flattering remarks in regard to our State, on the liberality which had secured the preparation and publication of our work on Natural

History, of which any country in Europe might be proud, as well as the very creditable Transactions of the State Agricultural Society, which were most highly appreciated.

ROYAL SOCIETY OF ENGLAND.—At the meetings of the Royal Agricultural Society of England, every facility was afforded the Secretary, as the representative of the Society, and the proceedings of the Society, in relation to a sample of Phosphate of Lime from Essex county, in our State, have been published in the Journal of the Royal Agricultural Society, and also in the Journal of our own Society. This important fertilizer, which is used to an extent in England, that will scarcely be credited by our farmers, is found in our own State in great abundance and of a quality superior to what can be readily obtained in England; and there is such a demand for it in England, for fertilizing their turnip crops, that orders have been sent here, we understand, for the entire yield of our mines—upon terms, it is believed, that will give a handsome return to the owners. If this is so valuable for England, the inquiry suggests itself at once, is it not equally valuable for our own soils. It cannot be doubted, that we ought to introduce it extensively here, and that instead of permitting it to go abroad to enrich the lands in foreign countries, we should retain it here, to increase our own crops, and when needed send them abroad, securing to ourselves the advantage of this fertilizer in the increased crops, which we should, by its use, be enabled to raise.

An article on the use of Phosphate of Lime and its advantages, as thoroughly demonstrated in England, will be found among the papers submitted, and we ask the careful attention of the farmers of New-York, to this valuable article.

AGRICULTURAL MUSEUM.—The great value of the Agricultural Museum, which has been commenced by the Society, has now been completely established in the public mind. The opportunities which are thus afforded for the examination of implements, seeds, &c., have been, during the past year, much more extensively than any previous year, enjoyed by farmers and others—and nothing but a want of room prevents the Society extending it, so as to be equal to any in the world.

The Secretary availed himself of the opportunities which were afforded him while in Europe, to obtain an interchange of grains, seeds, &c., from extensive establishments in London, Edinburgh and Paris, and has already received from London and Paris, very extensive and valuable collections, which have been arranged in cases in the rooms; also a small collection from California. The varieties received from one house in London, Charlwood & Cummins, are 117; and from Vilmorin, Andrieux & Co., Paris, several hundred. The letter from Mons. Vilmorin & Co., and from the Horticultural Society of Paris, accompany this report. An extensive collection from Peter Lawson & Son, Edinburgh, who exhibited much the most perfect collection at the Exhibition, is expected, and another extensive one from Vilmorin & Co., which will probably contain samples of all the varieties of wheat grown in Europe. To enable the Society to continue and make perfect this system of exchanges, they must rely upon the farmers of the State, to furnish them for exchange, samples of all their grain, in the head as well as in the berry—and there can be little doubt, that results of great importance in the improvement of our crops by the introduction of new and valuable varieties of grain and seeds, will soon be experienced. To enable us to accomplish, however, all that is desired, it will be necessary that very largely increased space be provided for the arrangement of the collection. The Legislature will, doubtless, make such provision, should the importance of the collection be as favorably appreciated by them as it is by the public at large.

Great Exhibition in London.—It will be recollected that in our last report, this exhibition was alluded to—and that an appropriation had been made by the executive committee for the purpose of being awarded to such of the members of the Society as should receive prize medals at that exhibition. It gives the Society great pleasure to announce the following persons as having received prizes; and for some of the articles to which prizes were awarded, too much praise cannot be given for their importance to the agriculturist; and it may, without disparagement to others, be said, that the exhibitors contributed largely to that measure of credit which was finally awarded to our country. Gold medals have been awarded to the following:

C. H. McCormick, for his Grain Reaper.
D. Dick, for his Anti-Friction Presses.
Prouty & Co., for his Center Draught Plow No. 40.
Adirondack Co., for Steel and Ore.
Thomas Bell, for Wheat.
B. B. Kirtland, for Indian Corn.
General Harmon, for Wheat.
Oswego Starch Factory, for Starch, &c.
Lerow & Blodget, for Rotary Sewing Machine.
Palmer & Co., for Artificial Leg.

The following persons received Honorable Mention for their exhibition, and a Silver Medal has been awarded by the Executive Committee.

E. R. Dix, Farm Products.
Oswego Starch Factory, Fecula of Maize.
Wm. Hotchkiss, Wheat.
R. L. Pell, Variety of American Woods.
A. B. Allen & Co. Agricultural Tools.
James Pirsson, New-York, Piano.

A more detailed account in relation to these contributions will be found in the remarks of the President of the Society in presenting the Medals to the successful competitors. It is proper to observe that the results of this Great Exhibition, it is believed, will be of a character fully to realize all that was anticipated from it.

The following striking and truthful passage from a paper entitled "A last look at the Crystal Palace," by an English lady, expresses very happily the lessons taught in some measure by the exhibition:

"The spirit of the Crystal Palace has also incorporated itself with history, and future ages will read with astonishment the details of the difficulties attendant on the undertaking in its outset; the energy that overcame them; the entire success that crowned its completion; the surpassing ingenuity and beauty of the edifice; the wonderful supplies that enriched it from all nations; the order observed in its arrangements; the millions that came from far and near to behold its treasures; the admirable decorum of all classes of visitors, (raising the national character to a height it had never yet been able publicly and incontrovertibly to display); the benevolence it fostered; the religious solemnity with which it was opened and closed; the blessings of Providence that preserved it, and all and every thing connected with it from harm or loss."

Draining.—The increasing attention which is being given to drainage in various portions of the State, gives assurance that the efforts and recommendations of the Society have not been without most satisfactory results. Wherever this has been judiciously adopted, the returns have been in the highest degree encouraging, and in no case that has come to our knowledge, has the result been unfavorable. The facility with which tiles for draining can now be obtained, has doubtless led, during the past season, to a large increase in drainage over former years; and that it will continue to advance we cannot doubt. In one instance reported to the Society, a farmer has constructed sixteen miles of drain upon his farm since he came in possession of it, and the particulars relating to his system of drainage, the increased crop secured, and the advantages derived from it will be found embodied in the report of the Society submitted. In another instance, nine and a half miles have been accomplished in three years. There are many other instances which have come to our knowledge, which are equally satisfactory, though the amount of drainage has not been as large as in the cases referred to. We would renew our recommendation to farmers to give more attention to this subject, and wherever the nature of their soil requires it and their means will enable them to prosecute it, to commence draining, and thus continue it until no part of the farm shall suffer from either surface water or from springs beneath.

COUNTY SURVEYS.—The great value of these surveys has been sanctioned by the approbation of the friends of Agriculture, in every part of our country. That of the President of the Society, of the County of Seneca, published in our last volume of Transactions, is a work in itself, of such value as to be almost indispensible to the farmer, who is desirous of carrying out his farm operations in the most successful manner. It is a model for reports for the future, which we hope to see equalled, if not excelled. In connection with our present report, we expect to present a valuable report of the county of Madison, by Mr. G. Evans, who was appointed to make the survey. From what we have seen of the report, we are led to believe that it will prove a valuable addition to our Agricultural interest. So deeply impressed are the officers of the Society, with the great advantage to the interests of Agriculture from these surveys, that they intend, so far as they can influence their successors, to have the work progress as rapidly as the means of the Society will permit. *

AGRICULTURAL EDUCATION.—The Society has long been impressed with the necessity of having an Institution connected with a farm for the education of the sons of the farmer and mechanics of our State, which would afford them all the facilities for a thorough education, and at the same time furnish them with all that practical knowledge which will prepare them on leaving the Institution, to take charge of a farm, or business for which they are designated. The matter was ably presented to the last Legislature by the friends of the cause in the Assembly, and a bill was finally matured that was well calculated to carry out the wishes of the friends of the cause, which failed for the want of a single vote. It is most ardently hoped, that the present session of the Legislature will not close its labors, until they have furnished to the farmers and mechanics what is so much needed, an Agricultural Institution connected with a model farm.

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* Since this report was prepared, the Executive Board have decided to prosecute the Survey of the county of Essex, for the present year.

The experience of every year, more clearly unfolds the wants of the farmer, in this direction. The advantages which science is capable of yielding to his efforts, are more clearly seen, and the want of it more deeply felt—and in a country like ours, where intelligence in every class of our citizens, rightly to prepare them for their inestimable privileges as American citizens, is indispensible, the demand for such an Institution as is proposed, cannot in the mind of intelligent thinking men, admit of a serious question. We would, therefore, urge this matter upon the consideration of those who have the care of our institutions, trusting that such action will be taken, as shall redound not only to the honor of our State, but to the great advantage of our most numerous class of citizens, in whose welfare and improvement every other department of our State is most deeply interested.

Winter Exhibition.—A premium list was prepared, after the general premium list had been arranged, for a winter exhibition of fat cattle, dressed meats, and grain and seeds. The entries which have been made, and the stock which has already arrived, gives cheering assurance that this is what is wanted. The exhibition of stall fed cattle, at the annual fairs, has never been large, and as there is no market, ordinarily, where the fairs are held for such stock, they are obliged to be taken home at great expense, as well as risk. It was in view of this, as well as to afford an opportunity to members of the Legislature, and others, to view and examine the superior animals which are being fattened in our State, that the exhibition was attempted. Of its success we have no reason to doubt; and the proper arrangement and classification of the animals with suitable premiums, will, doubtless, hereafter, be effected, to the satisfaction of all. The show of grain, which is another feature in this exhibition, is very important. It will enable farmers to make exchange of seed grain, so important in order to secure a crop of the heaviest grain—and will, eventually, result in a permanent and valuable improvement, in all our varieties of grain.

It is desirable that a somewhat later day should be selected for the annual winter exhibition, and it is proper to have the exhibition at the time of the annual meeting. The selection of a day a few weeks later, would probably be satisfactory, and accomplish all that may be desired. It is submitted for the consideration of the Society.

Premium List.—The Executive Committee desire to call the attention of their successors to the premium list, and would most respectfully suggest a careful revision of it, and such additions as shall be found advisable.

In regard to animals, it is believed, that in order to arrive at such conclusion as shall be satisfactory, it will be necessary to agree upon a scale of points, that shall, in the opinion of the best judges, constitute a perfect animal of the various breeds. In our Transactions for 1850, in the article by Col. Le Couteur, on Jersey cattle, will be found a scale of points for that breed, which has been adhered to by the Royal Agricultural Society of Jersey, and has given entire satisfaction. The Executive Committee are aware, that it will take time to arrive at a scale that will be entirely satisfactory, but they fully believe that the time has arrived when an effort should be made to accomplish this.

The variety and merit of our Agricultural Implements, of various kinds, surpass all the expectations of the most sanguine. It is apparent that some more systematic and thorough trial must be had, in order that the public may be enabled to judge as to the merits of different implements. To enable the Society to do this, thorough trials similar to the one adopted in the case of plows, must be had, and it is suggested that a trial of Grain Reapers, which are world-wide in their reputation, from the marked and triumphant success of two of them which have been in operation the past season in England, may be had, during the season of harvest, this year—also, thrashers, horse-powers, drills, and such other implements as can be conveniently tried. The multiplication of implements is not, of course, an advantage to the farmer—and it is often on account of their number that inferior ones find sales, much to the injury of the farmer. It is a duty which the Society owes to the public, at the earliest practicable moment, to make such trials and tests as will lead to reasonable results as to the best implements in use.

In many other departments, it is very desirable that rules should be adopted, designating what shall constitute superiority --and it is believed that much may be done to accomplish what is desired in this direction.

COMMITTEE TO VISIT COUNTY ASSOCIATIONS.—It is believed that the most satisfactory results would arise, could there be formed a closer connection between the State and County Societies. It is suggested for consideration, that a committee, consisting of two members, one of them to be a Vice President of the District, be appointed to visit the County Societies at their annual exhibitions, and that they make report of their examinations, and all such matter of interest as may come to their notice. It is believed, that in this way, a new interest will be given to all of our county organizations; the proceedings of the State Society, will be brought more fully before the farmers throughout the State, and in this manner the various facts necessary to enable the Executive Committee to meet the wants of the farmers of the entire State, will be brought before them, and the premium list can thus be arranged, so as to accomplish all that can be reasonably desired. It will also enable the Society, more fully to appreciate the deficiencies that may exist in the methods of farming, to advise in relation thereto, and thus advance the interests of the farmer. It is believed that gentlemen can be secured, who will gladly give their attention to this subject, and thus aid in advancing the great objects the Society have in view, the improvement of the Agricultural interests of the State.

ANNUAL FAIR.—The 11th Annual Exhibition of the Society was held at Rochester, on the 16th, 17th, 18th and 19th of September. The return of these gatherings of the farmers, is looked forward to, with immense interest. It was at one time feared, that as they recurred in successive years, the interest in them would diminish; but the reverse has been most peculiarly observable, in regard to all our exhibitions. Each succeeding year, largely increases the number of exhibitors, as well as the number in attendance. The occasion is now one which is longed for by the people, not from the State alone, but by the Union, and the British Provinces, and it is a matter of congratulation, that this is so, evidencing, most strongly as it does, the strong hold which these great exhibitions of the improvements of our age have upon the affections of the people.

It is this encouragement which the Society receives from the people, that encourages them to devote their entire energies, to accomplish the most they can for the people; and they can but reassure the citizens of our State, that so far as they are concerned, no efforts shall be relaxed, no means left untried, that have a reasonable prospect of making these exhibitions more and more worthy of the confidence and patronage of our whole country.

The farmers of the State of New-York, have never assembled in greater numbers, or under more gratifying circumstances, than attended the week of their Annual Fair, so pleasantly and satis factorily held at Rochester.

The display of cattle exceeded in number and excellence all preceding exhibitions; the same remark is true as to the horses sheep and swine. The improvement in farm implements, tools and machinery, was decided, and their number larger than at any previous exhibition, covering in quantity several acres of the fair grounds. Farm products evidenced an increased attention among farmers to the principles of their profession; and though the Society may congratulate its members upon its continued successful efforts, yet it must not be forgotten, that improvement is but now beginning to shed its influences and benefits upon the people; that renewed and strenuous efforts must be made to extend these influences; to secure the largest amount of good to the greatest number of individuals.

It is reasonably estimated that not less than 100,000 persons visited Rochester and the fair grounds during the exhibition week, and it is found that the receipts of the Society are increased beyond any former year—presenting now, a limited, though perhaps sufficient security against failure hereafter, and a hope also that the premium list may, to some extent be increased or enlarged, in accordance with the great objects of agricultural improvement.

The receipts in 1850 amounted to	$10,465 00
in 1851 " "	11,954 25

The entries at the business office in 1851 were nearly as follows:

Class A, 482 entries, comprising 2,014 head of cattle, horses, sheep, swine and poultry.
B, 283 entries of grain and other farm products, agricultural implements, machinery, vegetables, &c.
C, 358 entries of domestic manufactures, flowers, fruits, &c.
D, 400 entries of stoves, furnaces, hardware, silverware, jewelry, cutlery, machinery tools, &c., &c.

In regard to the display of Agricultural Implements, it is not too much to say, that in respect to the variety of articles, and the extent of the competition, it was superior to any exhibition ever before had in this country. The advance which has been made in this department, is one of the most marked indications of the improvements which are taking place in the agricultural class itself, in all the operations connected with their profession. Who can doubt, that improved implements indicate improved husbandry, increased crops—as the land is more thoroughly cultivated, the crops are better—and thus the farmer increases in wealth, while *it is* undoubtedly true, *that in very many instances*, his expenses are diminished.

It has ever been one of the most interesting features of our annual exhibitions that the Chief magistrate of the State, and other State officers, have been present to witness the success of the farmers and mechanics, as exhibited before the entire population. His Excellency Gov. Hunt, was present on this occasion, deeply interested in all that was presented before him, and gratified to meet on this joyous occasion so many of the farmers of New-York, who were equally pleased at the presence of the respected Chief Magistrate of the State among them. As in former years large numbers of the representatives of the people were present; many of them officiating as judges at the exhibition, and all warmly appreciating the contributions of the farmers and mechanics of this State, presented before them.

The Society was favored on this occasion with the attendance of Lord ELGIN, Governor General of the British Provinces. His Excellency, deeply interested in the cause of Agriculture, familiar with all the improvements in Great Britain, and particularly in those of Scotland, than whose farmers none more enterprizing and successful can be found in the world, devoted himself assiduously to the examination of the exhibition in all its departments, and expressed himself in the highest degree gratified with the display made by the farmers and mechanics of New-York. It was not among the least of the pleasant circumstances connected with the visit of his Excellency to the show ground, that he was permitted to witness some of the finest cattle and sheep on exhibition from Upper Canada, and to find his own countrymen there, giving him a most cordial welcome to our great exhibition, to whose interest many of the enterprizing farmers of Canada have for many years largely contributed. The Governor General was attended by the gentlemen of his staff who were highly gratified with the exhibition. It was, to the officers of the Society, a matter of deep regret that his Excellency, on account of another engagement, was under the necessity of leaving before the final close of the exhibition.

His Excellency, ex President Tyler was also in attendance, interested as he ever has been in the advancement of the great cause of agriculture. There were in attendance many distinguished men of our country, and the officers of the State Agricultural

Societies of Pennsylvania, Ohio and Michigan, the Provincial Societies of Canada, and delegates from County Societies, and gentlemen from nearly every State in the Union.

His Excellency, Governor Wright, of Indiana, was present and devoted himself most thoroughly to the whole exhibition in all its details, making himself familiar with every thing appertaining to it, desirous to prepare himself fully to carry out the great improvements which were presented before him, in the flourishing State over which he had been called to officiate, as their Chief Magistrate.

It was a matter of regret that His Excellency, the President of the United States, himself, a son of New-York, and ever devoted to her welfare and to her advancement, could not be present. He expressed to the President of the Society, his regret, that his public duties and previous engagements, prevented his acceptance of the invitation extended to him. His annual Message, since delivered, in which the importance of Agriculture, and the necessity of its being given a prominent place among the subjects which receive attention from Congress, affords the best evidence that could be given, of his desire to see this great interest prosper and occupy the position which, from its importance in our country, and its best interests, it is so preeminently entitled to.

The farmers of Western New-York, as they had promised the Society, and their promises are ever sure to be fulfilled, presented, so far as they were concerned, one of the finest displays of stock and articles of domestic industry, which has been shown in this State. Nor is it to be disguised, that among the great attractions of the show, were the contributions of stock, implements, and machinery, and domestic manufactures, from Central and Eastern New-York—thus showing, what every returning exhibition more clearly does, that this is emphatically an exhibition of the Empire State, and that such it may ever continue to be, is the ardent desire of every sincere friend, to the advancement of the great cause of Agricultural Improvement.

The arrangements of the Fair Grounds, under the direction of the President of the Society, aided by the citizens of Rochester, were most admirable—many very marked and valuable improvements having been introduced not before seen at the exhibitions. The crowd in attendance exceeded all former occasions, and although an immense breadth of ground was enclosed, every part of it was fully occupied, at times, and it was often difficult to thread one's way through the great throng of people, all intent on seeing the whole exhibition, and often, by their very eagerness preventing the accomplishment of what they most desired. But it is most evident that unless we have the people in great numbers, they will not be satisfied with the show—and although, for the time, they speak of the crowd as so great that they will not again attend, yet, after they return to their homes, it is one of the great events of their lives, and they refer with the deepest interest, to the fact that they were present at the Great Fair, the greatest ever held—and if spared another year, *again* will they be found in attendance. Such is human nature—and well that it is so—for in this desire to be present, on this great occasion, arises the necessity of making it an occasion suited to their expectations.

We have not time or space to particularise all that was attractive in the Exhibition. The Floral Tent, however, under the charge of L. A. Ward, Esq., and arranged by the gentlemen and ladies of Rochester, presented a scene of attraction which has never been excelled in this State. It continued to be thronged by admiring thousands during the whole Fair—alike admiring the display of fruits and flowers, and the beauty of the arrangement of the tents.

The display of Fruits was such as to do credit to Western New-York, which, as a fruit-growing region, it may without doubt be affirmed, equals, if it does not excel, any other portion of our country.

In 1843, the Society held (at that time) one of its most successful fairs at Rochester. The people then came in numbers, far sur passing all of the previous exhibitions of the Society. Again in 1851, the Society met in the same locality, and the Fair exceeded all previous ones in numbers; and as compared with the previous one held at the same place, was more than twice as extensive, showing the advance which has been made, through the exertions of the Society, in this great and important branch of industry.

In the competition for the awards of the Society, never was there more interest manifested; and the judges had a very difficult task to discriminate, where so much was superior. In the discharge of their arduous duties, it could not be expected that satisfaction should be given to all; but we have the most abundant evidence, from the character of the judges, that the awards were made, believing that the articles or animals to which the awards of merit were given, were by their superiority entitled to them. It is not unusual at the close of our Annual Exhibition, that some of those who have been unsuccessful, should feel grieved at the result, and it is not very uncommon for such individuals to express themselves in regard to the judges, in language which cannot be justified. The duty of a judge at our Fairs, is one of no ordinary responsibility. The awards which are given have a value in the community, such as no other institution in our country can give. In selecting judges, it has been the sole aim of the Executive Committee to select men of the highest standing and of undoubted integrity, conversant with the articles to be submitted to their decision, and who have no interest in the matters brought before them. It is not too much to say, that in the selection of judges, the Society have been most fortunate, and although from failure to attend, vacancies sometimes occur, which cannot always be as well supplied upon the show grounds; still the awards bear the stamp of impartiality, and a desire to do justice.

PROCEEDINGS ON THE SHOW GROUNDS.—The Society convened the last day of the exhibition, under the spacious tent, J. Delafield, President, in the chair.

The proceedings were opened with an expressive service of prayer and thanksgiving, by the Reverend Dr. Van Ingen, of the Episcopal Church, a large number of clergy, of various denominations being also present.

The President addressed the Society, saying,

Members of the New-York State Agricultural Society, and friends who surround us:

GENTLEMEN: Twelve months have rolled away since last we met under this canopy. Within that period our minds have been occupied with events so numerous, of interest so intense, in value so important, that we look back on the ruffled stream not with regret—no—but with feelings vibrating with gratitude, fervent and pure to our Creator, for the lessons of wisdom, bountiful harvests and innumerable blessings conferred upon our State and Nation.

While religion and politics have excited in some portions of the globe, the strongest passions of men, abstract moral principles have occupied and divided the thoughts of men in our land. Strong, however, in love of the country bequeathed to us by the wise and good men of 1776, applying intelligence and reason to all deliberations, a wholesome restraint is given to the young, ardent and aspiring spirit, which happily characterises the people of this nation.

As an agricultural people we have reason to rejoice that our pursuits give to the public mind time for calm inquiry and reflection; as cultivators of the soil, intelligent, though perhaps not yet well instructed, prejudice holds but short lived and feeble sway. As an agricultural people we hold a position unlike any other nation on the earth; free and unshackled, our aim is to *outstrip* in all things, the better taught and better experienced people of the old world, where science and art first sprang into life; where the ripe and accomplished scholar is cheered and cherished, and the best faculties of man are brought with power to investigate the position and condition of the mighty universe, and to fathom space where the eye is impotent to range. Yes, gentlemen, such is the ambition of the American people, and that people is emphatically *a nation of farmers*, from whose ranks men have gone forth, seizing the highway of science, and pressing forward with indomitable courage, have reached a position in the esteem of their fellow men affording to them a high and rich reward

Gentlemen—we are obnoxious to the doubts and occasional taunts of the old world, and doubtless with reason, for entertaining aims so high; yet it is a noble and honorable ambition, leading, as I firmly believe, to the fulfilment of a prophecy of old in regard to the human race; at least we may claim *to share* with the older portions of the globe, in efforts to ameliorate from age to age the blight of the earth, caused by the sin of the parent man, to lessen its severity, and be permitted to eradicate it from this world.

It seems at this period, that man is allowed by increasing knowledge and its due application, to cultivate and improve the soil to a greater extent than was ever done before, and thus he necessarily increases the happiness of his species. This increase is gradual and limited, yet it is evidently progressive, and induces us to hope that as the mind improves, the stain of man's guilt is lessened, and that the earth will be permitted to return to that degree of fruitfulness which was known when Eden was the garden and man was pure.

Gentlemen—I congratulate you upon the return of this our festival, upon the evident improvement of our agricultural products and implements, and upon the wide spread interests and influences of your Society, made manifest by the concourse of friends from every State in our Union.

And now permit me to introduce to you the Honorable Stephen A. Douglass, the gifted Senator of Illinois; once we claimed him as our own, as a man of New-York, now he belongs to the nation and its highest counsels, being classed among our brightest ornaments, and none the less brilliant for being the farmer and mechanic's son.

Senator Douglass then addressed the immense throng of auditors, detaining them for more than an hour as most engrossed and attentive auditors.

At the close of the address, the choir chaunted the "Benedicite."

On motion of the Hon. John A. King, of Queens county, it was Resolved, That the thanks of the Society, be presented to the Hon. S. A. Douglass, for his eloquent and practical address, and that he be requested to furnish a copy of the same for publication in the Transactions of the Society.

B. P. Johnson, Esq., Secretary of the Society, announced the award of premiums, as decided by the judges; and the Society adjourned.

Thus has closed another of the great gatherings of the farmers of our State and of our country. The approbation of tens of thousands have gone forth, to the success of the farmers and mechanics of New-York, in their great work of improvement. The Society, from all the expressions of approbation they have received from every quarter, are encouraged to redouble their efforts, and to devise new plans to extend the usefulness of the Society. They are desirous, wherever deficiencies exist, to remedy them—where they have failed to meet the desires of those who have, by their presence as exhibitors, contributed to the success of the Society, to endeavor fully hereafter to prepare and arrange their operations, to remove every reasonable cause for complaint, if complaint has been made.

Another year is opening upon us, and while we are satisfied with the progress heretofore made, as exceeding our expectations, we resign the trust that has been committed to us as officers of the Society, feeling that we have endeavored to the best of our ability to discharge the high and important trust committed us. If we have failed in discharging that trust, as was expected of us, it has not been from a want of desire fully to accomplish it.

The receipts and expenditures of the Society, will be found detailed in the report of the Treasurer, which is herewith submitted, and we have the satisfaction of presenting to our successors, our permanent funds, undiminished, and a balance on hand, sufficient for the ordinary expenses of the Society during the year.

B. P. JOHNSON,
Corresponding Secretary.

ADDRESS

OF THE HON. STEPHEN A. DOUGLASS, BEFORE THE NEW-YORK STATE AGRICULTURAL SOCIETY; DELIVERED AT ROCHESTER, SEPTEMBER 19th, 1851.

Mr. President and Gentlemen of the
New-York Agricultural Society:

I have not the presumption to suppose that I can enlighten this immense assemblage of scientific and practical farmers, by any thing I can say on the subject of agriculture. The theme is so vast, and embraces so many co-ordinate branches of science and industry, that a mere enumeration of these would far exceed the limits of this discourse.

Agriculture has found a larger field for the exercise of the intellectual and moral energies of man in this country, than in any other on the globe. It has found here the conditions of its fullest development and its most ample success—the greatest stimulus to exertion, and the highest reward. Our country embraces a greater extent of territory, a more fertile soil, a more diversified climate, and above all, a far more intelligent, energetic and independent yeomanry, than any other with whose agricultural productions it is now competing, for the markets of the world. Our lands are cheap, and not exhausted by the cultivation of twenty centuries. Our farmers are the owners of the soil in fee-simple, while the abolition of the laws of primogeniture prevents the accumulation of real property in the hands of a few land owners. Our country is the first that has set the world the example of independent farming—the first that has restored agricultural labor to that natural dignity, of which the feudal systems of the old world had deprived it. Every tree planted by the American farmer, every shrub, every flower he cultivates, every hedge he grows, is his own, and descends as an inheritance to his children.

Agriculture in this country is a highly respectable, and at the same time, a most attractive pursuit. It is not only resorted to as a means of acquiring an honest independence, but as a dignified and pleasurable occupation by men of science and letters, by statesmen and warriors, merchants and navigators, in short by all who have gathered wealth, honor and distinction in other pursuits of life.

So long as agriculture was the exclusive occupation of an enslaved peasantry, it produced little more than the necessaries of life. It remained a mere sluggish labor; consuming men's physical strength, and descending, with little improvement, from father to son, among those who were born and bred to it. Happily for the progress of mankind, the condition of the agricultural laborer has changed in many parts of the world, and it is no small source of pride and gratification for us to know, that it is the example of America which has wrought the change, and restored agriculture to its original rank among the most honorable occupations of men. It is now a profession, calling to its aid science and the mechanic arts, and, in its every branch, the inventive genius of man. The farmer, instead of merely following the beaten track of his ancestor, now brings to his pursuit his own powers of inquiry and investigation. Chemistry teaches him the nature and quality of the ingredients composing his soil, the species of crop most suitable to its productive power, and the kinds of manure he must use, and the proportion of cattle he must keep to make his farm productive. As he acquires a knowledge of chemistry, of agricultural geology, and of the physiology of plants and animals, his crops become more certain, and his reward more sure. Armed with knowledge, the fertility of man's mind has discovered remedies for the sterility of soils, and found means of guarding the fruits of his labor even against the vicissitudes of climate. This is not all. The American farmer possesses the means of multiplying labor, and thereby its reward, by the most ingenious and effective machinery.

Great as the ratio of our farming population may be, compared to that engaged in other pursuits, it bears, as yet, no proportion to the quantity of uncultivated lands. We have more soil, than people to render it productive; while the very opposite ratio exists in the old world. As manual labor is expensive and procured with difficulty, machines are naturally called in to take its place without detriment to the laborer. The machine does not deprive him of employment, it merely performs that labor for which he has no time to spare, and without which his cultivation would be confined to narrower limits. No country can award a higher premium to the inventive genius of machinists than our own; none can boast of a greater number of inventions applicable to agricultural and mechanic arts. Our agricultural machines, especially, have excited the admiration of the world; and along with our substantial achievements in that department of industry, it is perhaps not unpleasant to have extorted the testimony of England, on a late occasion, to the ingenuity displayed by American inventors.

The growth of our country is marked by the advancement of agriculture. Agriculture is settling our new States and Territories; agriculture gives employment to our workshops; agriculture furnishes the products which form the basis of our foreign and domestic commerce; agriculture, by supplying the bulky articles of our exports, employs the tonnage of our ship-builders, and in seeking markets for its increased products, calls for the construction of railroads and canals. The farmers of Western New-York demanded the construction of the Erie Canal, and the farmer of the Western States now calls for its enlargement. As the Western States and Territories become settled, and agricultural products accumulate, new railroads and canals become necessary to furnish means of transportation to the seaboard. The West is desirous of securing every avenue to the sea. It requires the navigation of the Mississippi and of the St. Lawrence, the canals of New-York, Pennsylvania, Ohio, Indiana and Illinois, and all the railroads now constructed or in process of construction from the sea coast to the Mississippi valley. And all these facilities will yet prove insufficient to form adequate outlets for the constantly accumulating products of the Western farmers. New lines of communication will be called into existence, and it is extremely doubtful whether the capital and enterprise of the country will be able to keep pace with the increased demands for internal improvements.

Thus agriculture stimulates every species of industry, and is the parent and supporter of them all. What, I would ask, would be the present condition of our foreign commerce, had it not been stimulated by the increased productions of agriculture? What the condition of our mercantile navy, in steamers and sailing ships already outstripping that of the first maritime nations of the globe? It is the bulky products of agriculture that make up freights, and furnish the principal portion of our foreign exchanges.

And it is fortunate for us, for the preservation of our liberal institutions, that agriculture enters so largely into the political economy of our country.

As now pursued, it developes the mind and the body, and preserves both the health and morals of our people. As long as so large a portion of our voters are engaged in agricultural pursuits, we need apprehend no danger to our republican institutions—no pernicious influence of foreign nations on the steady development of our wealth and power. Producing all the necessaries of life far beyond our own wants, and importing for the most part, only the luxuries, we are, whenever we choose, independent of the rest of the world; while other nations, producing the necessaries of life, not in sufficient quantities to feed their own population, and depending on the sale of their luxuries for the supply of this deficiency, will have a care not wantonly to interrupt our peaceful relations with them. England, once ready "to spend her last guinea, and to sacrifice her last man," to break down the continental system of Europe, will not easily be tempted to build up a similar system in America; and it is not to be supposed, that other nations will press forward to do that from which Great Britain wisely abstains. As long as the great body of our population is composed of owners and cultivators of the soil, we shall remain true to our republican instincts. We may not succeed in the production of every luxury for the enjoyment and gratification of man; but we will produce, at the cheapest rate, and in the greatest abundance, those things which contribute most to the comfort, happiness, and peace, not only of our own people, but of the laboring classes of all other countries.

We are now able to furnish the whole world with the cheapest and best food, and with the cheapest and best raiment. We furnish grain, provisions and cotton—the three staple articles of commerce—in greater quantities and of better qualities, than any other nation; and the time is not far distant when we will be able also to regulate their prices. What a boundless field, then, is opened to our agricultural industry. What ample reward to the labor of our farmers! The command of the world-staples, even without the acquisition of California, (which secures to us the control of the precious metals,) must have given us the control of the commerce of the world.

But independent of these international considerations, there is yet another which will naturally suggest itself to your minds. Our agricultural products, owing to the vast extent of our territory, and the great differences of soil and climate, are so varied as to furnish abundant exchanges for the domestic trade between the different States of the Union. They furnish in themselves the materials for a very extensive internal commerce, employ, to a large extent, our coasting tonnage, and secure constant employment to our steamboats and railroads. Planting and farming are the mutual allies of each other, as are, indeed, all branches of agricultural industry, notwithstanding the many prejudices which, in this respect, may be entertained in various sections of the country. They take a narrow view of political economy, who can see but rival interests growing out of the different productions of the same country; and they are worse than bigoted who, in consequence of it indulge in unworthy jealousies or hostile sentiments towards brethren of the same family. You cannot, by legitimate means, benefit any one branch of industry of a great country, without indirectly benefiting all the rest; but when, as in the case before us, one interest is dependent on the other—when the producer of one article is the best and often the only consumer of the other, who is so rash as to assert that the prosperity of the one, works the injury of the other? But it is not my purpose on the present occasion, further to pursue this train of thought. My object is not to make proselytes for a particular theory; but simply to show the necessary connection and intimate relationship of all the branches of the same species of industry, and their harmonious co-operation in promoting the wealth, happiness and power of a great people. The free international exchange of commodities, so eagerly sought for, as the great great commercial desideratum of the different nations of Europe, exists already, by the simple operation of our federal constitution, between the different States of the Union; and the products of the different States of Europe are less varied, than those of the different geographical divisions of our common country. The domestic exchanges of every country naturally constitute the great bulk of its entire commerce; but in none—perhaps not even in China—is so large a portion of them furnished exclusively by the products of the soil, as in our own.

I have, thus far, briefly referred to Agriculture, in connection with other branches of industry; but I propose to go a step further, and consider, by themselves, some of the principal agricultural products, which enter largely into the political economy of this country. I do this for the purpose of showing, not only how each particular branch of Agriculture may, in turn, aid in building up the commercial and maritime importance of a nation; but, also, how one species of Agricultural industry may come to the assistance of another, with which it seems to have no necessary connection. And I may also be able to show, from examples furnished by our history, that even products seemingly competing with each other in the same markets, may yet have a tendency to create increased demands for all of them. With the theories and speculations of political economists, I have no disposition to meddle before this audience. I shall content myself with presenting facts, leaving you to make the application.

The leading American Agricultural staple is cotton, and its cultivation and manufacture have, within the last half century, acquired an importance far exceeding all other similar pursuits. The plant, though indigenous to the tropical regions of Asia, Africa and America, had only been used to a limited extent, for the purposes of clothing, when the American invention of the cotton-gin gave its cultivation an impetus and extension unprecedented in the annals of Agriculture. No branch of human industry has ever risen to importance and power so rapidly as that of cotton; none has produced so great a revolution in the commerce and manufactures of the civilized world. Previous to the Revolution, and even as late as the adoption of the federal constitution, but a single pound of cotton was exported from America; while it is now not only the principal article of our exports, (exceeding in value all other agricultural exports of our country,) but the great basis of our foreign exchanges, and the most powerful lever of the commerce of the world.

The cotton trade, alone, has sufficed to revolutionize the commerce of the world. Wherever a bale of cotton goes, it carries with it a portion of American intelligence and power. The abolition of the corn laws of England—opening the ports of Great Britain to American bread-stuffs and provisions—was a triumph achieved by the American cotton grower over the feudal aristocracy of the old world. It furnished bread to the laboring masses of Great Britain and Ireland, at the same time that it clothed them, and formed the first step towards the amelioration of their condition. It afforded increased markets, not only to the products of the South; but, from the necessary relation of all articles of commerce; also, to those of the Northern and North-Western

States of the Union. What has been effected in England by the power of American Agriculture, must, in due course of time, extend to every commercial and manufacturing country on the continent of Europe. The battle, against commercial restrictions, is now waging in Belgium, France, Germany, and Italy, and must, eventually, terminate in the abrogation of all monopolies.

In enumerating the leading Agricultural staples of our country, we are naturally led to the consideration of the tobacco plant. It is not my purpose here to inquire how far the use of tobacco, in any of its forms, may be regarded as an elegant accomplishment, or whether its culture should be encouraged, as one of the necessaries of life. In Holland, on the shores of the Baltic, and other countries of Europe, I believe, it has been regarded as a medicinal plant, and an antidote against prevailing diseases; while in some of the German States, its growth, owing to the general use of the weed, is enforced by law. Be this as it may, the use of tobacco, in some shape, has become general, in every quarter of the globe, and its production an object of national importance.

Tobacco enters largely into our foreign exchanges, being second only to cotton on the list of our agricultural exports. There is no nation with which we trade which does not use tobacco; while in several European countries it is a government monopoly, and one of the chief articles from which revenue is derived. In several States of the Union, it constitutes the chief staple article of agriculture, and its producers are large consumers of the ordinary products of the farm and dairy of other States; while in some of the Northern and North-western States, its culture has been introduced, as even more profitable than the usual Agricultural industry of our farmers.

But we not only export tobacco, we are also importers of the article to a large amount for our own consumption. It becomes an appropriate subject of inquiry, therefore, whether our soil and climate are not adapted to the production of those superior qualities which we now import, as well as those in the production of which we excel other portions of the world; and the question may also arise whether our qualities of tobacco may not be improved so as to equal those now imported from the principal West India Islands? At all events, the action of government is invoked not to slacken in its endeavors to induce the governments of France, Belgium, and Austria, to abandon their present tobacco monopolies, and to open their ports to the reception of this, as well as other agricultural staples of our country. I am aware that these endeavors up to this moment, have met with but little success; but this constitutes no valid reason why they should be abandoned. The age of monopolies is passed, and the check which every monopoly imposes on other branches of commerce, and through it, indirectly, on the revenue, added to our own governmental remonstrances, can, in the end, hardly fail to open the eyes of those nations, and effect the desired object.

I would now invite your attention to the exportation of breadstuffs. At one time, in the history of our country, a general impression prevailed, that we should never be able to export wheat and flour to Europe. The distance from European markets, the cost of transportation, interest on capital, insurance, all were figured up against us to show that competition, with the wheat growers of Europe, was entirely out of the question, and that we must confine our export of breadstuffs to the British North American Colonies, the West Indies and South America. This error, however, has been corrected by experience. Without including our large exports during the famine year, when we were almost the only sellers in the markets of Europe, our exports show a respectable increase in ordinary years; our means of transportation have improved, production has become cheaper, distances have been shortened, by the saving of time, and in spite of all the lugubrious prophecies of our croakers, we find our farmers competing with the principal wheat growers of Europe, in their own markets! American breadstuffs have gained a permanent foothold in the principal markets of the world, and our wheat flour is quite as great a favorite in Mark Lane, as any other species of the same article imported into England. Occasional fluctuation in prices—in particular years of large crops—must, of course, be submitted to in the trade of all agricultural staples; but these will be met, and their influences guarded against, by a frugal, industrious people.

But while in the trade of wheat and flour we meet with powerful rivals in the North and South of Europe—among the people on the Baltic and those bordering on the Black Sea—the trade in Indian corn and corn meal, and in provisions, is to a great extent, left almost without competition, save that which proceeds from the offer of cheaper and inferior substitutes. We can furnish good provisions, at lower rates than any other country on the globe; and Indian corn has no longer any other real competitor in British markets than, the now uncertain crop of Irish potatoes. With this view of the subject, you will pardon me if I at once proceed to the consideration of that important American staple.

Indian corn is, no doubt, an indigenous plant of North and South America; having been cultivated by the Indians many centuries before the discovery of this continent. Antiquarian researches and architectural ruins show that Indian corn must have been grown and held in high esteem as the chief article of food by the Aztecs, and this supposition becomes the more probable, as the principal other grains now cultivated in America, have been since introduced from Europe. It constitutes now a chief article of food for man and the animals subject to his dominion on this continent, and an important article of export to Europe, although many parts of Southern Europe have been found well adapted to its growth. It recommends itself to the great body of consumers by its nutritious qualities, far exceeding those of other substitutes for wheat and rye, now in use among the laboring classes of Europe, and by the greater variety of forms in which it may be prepared for food. French chemists assert that two cents' worth of Indian corn will go further in sustaining animal life than ten cents' worth of wheat, rye or barley. There is no doubt that its consumption is increasing everywhere, and that its production in this country, on the largest scale, will abundantly reward the farmer. Indian corn will, in due time, not only partially supplant the potato, (which is now an uncertain crop in Europe,) but also compete successfully with the more valuable grains and breadstuffs.

Among the agricultural products entering into the general consumption of all civilized nations, sugar deservedly occupies a very high rank. It is a disputed question whether the sugar cane is indigenous to America. It has been known and cultivated from the earliest periods, in Asia, and especially in China, and is by some supposed to have been introduced into America by the Spaniards and Portuguese. Others maintain that the cane is a plant indigenous to the New-World. I incline to the latter opinion, but leave the subject to those who have the time and the inclination to investigate it.

Sugar from cane is produced to a great extent in the United States; but a large portion is yet imported from foreign countries. Whether the United States will ever be able to produce the quantity required for their own consumption, remains to be seen, and will in all likelihood depend on the probable annexation of more sugar-growing states to the Union. Some portions of Louisiana, Texas and Florida produce cane sugar to the extent of rewarding the cultivators; while in many of the Northern States large amounts of sugar are manufactured from the maple tree. The whole quantity, however, does not meet the demand for home consumption, and the question has often been asked whether some other plant, easily raised and cultivated, may not, in part at least, supply the deficiency?

The cultivation of the beet-root, for the manufacture of sugar, was introduced in France, during the operation of the continental system. That prohibitory system as long as it continued, constituted in itself the amplest protection against all foreign competition: but when, on the fall of Napoleon, some of the French colonies which had been seized upon by Great Britain, during the war, were restored to France, and the continental system itself abandoned, protection, in the shape of high duties upon colonial sugar was deemed necessary to sustain the cultivation of the beet-root. Under Louis Philippe, the growth of beet-root and the manufacture of beet-root sugar, received the utmost attention and fostering care of the Government. Both were encouraged by a series of legislative enactments, and, for a while, a fierce struggle was maintained between the advocates of the French colonial system, and the friends of the domestic article. The large and predominant interest of the consumer, which required, as an act of justice to all, that both kinds of sugar should be able to compete fairly for the home market, was entirely left out of the question. Meanwhile the protection of beet-root sugar increased more than ten-fold in amount, and since the entire removal of the protection by the imposition of an excise duty upon it, equal to the import duty on the colonial article, that branch of industry has maintained itself in defiance of all competition.

I am not aware that the soil and climate of France are, in any respect better adapted to the cultivation of the beet-root than many portions of the United States. At all events, considering that Prussia, Belgium, Saxony, other parts of Germany, and even Russia, have imitated the example of France, with the same if not greater success, there is no reason to suppose that it is entirely inapplicable to the United States; situated, for the most part, in equally favorable latitudes, and subjected to similar influences of climate. Is it not, therefore, a question worthy of your attention, whether the cultivation of the beet-root, as a sugar plant, may not be successfully introduced into our country, as a means of supplying the deficiency of cane?

This subject derives additional interest from the consideration that sugar in this country, has become an article of ordinary, daily consumption by every class of our population, and that the comfort and the well being of our industrial laborers require that its consumption should rather increase than diminish, in proportion to the increasing population of the United States.

Rice is a native of India; but was at an early period of our colonial history, transplanted to the shores of South Carolina and Georgia. I believe I hazard nothing in asserting that it is now growing more luxuriantly on our soil, than on the one that gave it birth, and that South Carolina rice, on account of its superior quality, commands the very highest price in foreign markets. It is the staple article of a section of country, which is comparatively valueless for any other species of Agricultural productions; being principally raised on swampy ground, naturally subject to inundation.

It is moreover confined to a few localities, and limited in quantity, though constituting a very valuable crop. Heretofore rice has only been raised in southern latitudes; but within a few years,—since the territory of Minesota has been thrown open to settlers,—it has been ascertained that the innumerable small lakes and swamps, which dot the map of that section of country, upon the head waters of the Mississippi, contain a luxurions and spontaneous growth of wild rice, which is well adapted to culinary purposes. Is it not then, a subject worthy of investigation, whether this new species of rice, a native of the North, and accustomed to a northern climate, may not be produced in the swamps and marshes which now disfigure our best agricultural regions, and remain a source of disease and death to their inhabitants? I merely throw out these hints to direct your attention to the subject; not knowing whether others may not have preceded me. I leave it to your better knowledge, and to your practical qualifications as farmers, to make the necessary experiments; believing that in agriculture, as in other sciences and occupations, experience alone is the proper test of all discoveries and improvements.

I have within the last year, procured a considerable quantity of the seeds of this rice from the Patent office at Washington, and distributed them among those whom I thought likely to make experiments in different parts of the country; but sufficient time has not elapsed to ascertain the result. Were it not for the British system of differential duties upon articles, the productions of different species of labor, South Carolina and Georgia rice would have continued to be exported in large quantities. But the system by which England has, of late years, favored the agricultural products of her East India provinces, to the detriment and ruin of her own West India colonies, has also, for a time at least, exercised a discouraging influence on the rice growers of America. It is a subject of congratulation, therefore, to know that, more recently rice has found a ready home market, at such remunerating prices, as promise to that branch of agriculture a long period of prosperity and success.

Hemp has long been, and still continues to be, a very considerable item in our foreign imports. The government itself has, from its foundation, been a large importer of hemp, for naval purposes, in addition to what has been introduced, on private account, principally for the use of our commercial marine.

The importations commenced when little or no hemp was produced in this country, and have been continued, under the impression that American hemp was not equal to that of Russia for the manufacture of cordage. It has long since been ascertained, however, that our soil and climate are well adapted to the growth of hemp, and that we can produce it cheap and in abundance. It is now believed that the hemp grown in Kentucky, Missouri, Ohio, Illinois, Indiana, Iowa, and perhaps other States of the Union, is fully equal to the Russian in strength and texture, and that our countrymen have discovered a process of rotting, by which it can be rendered equal, if not superior, to that of Russia, for all purposes to which the latter has been applied in this country. The fact renders the culture of hemp well worth the attention of American agriculturists. A people now only the second, and destined soon to be the first commercial and maritime nation of the world, ought to bestow a special care on all products necessary to the success of its commercial and naval enterprise. The capacity of our soil for the productions of hemp is unlimited; while our immense foreign, coastwise, and internal navigation, insure to it an ample and increasing home market.

I would fain say a few words on the culture of Mulberries, in connection with the raising of the silk-worm and the manufacture of silk. I am aware that the experiments heretofore made have usually proved unsuccessful; but the enterprise resembled more a mercantile speculation than a fair trial by practical men. I am loth to believe that within the wide range of our Northern and Southern latitudes, there should not be a spot favorable to the cultivation of the silk-worm. Silk-worms, and the peculiar species of mulberry upon which they live, were first introduced into Asia Minor from China; and the experiment having succeeded in Greece, in Turkey, in France, in Italy, in Spain, and in Portugal, is it not reasonable to suppose that they would also thrive in many portions of our own country, if the attention and care were bestowed upon them which are the conditions of their growth? Experiments have lately been made in South Carolina in the cultivation of the Chinese tea-plant, and if the accounts I have seen are to be relied upon, have entirely succeeded.

Why then should not silk, an article much less delicate than tea, and which has already succeeded in so many different climes, be susceptible also of profitable cultivation in the United States. A large portion of our imports from Europe, consists of manufactured silks, and if we could succeed in domesticating that species of industry, a degree of stability would be imparted to our foreign commercial policy, which would serve to prevent the confounding of political economy with partizan politics.

My remarks on the subject of silk apply, perhaps, with equal force, to the cultivation of the Vine. The vine is a native of Asia, but has attained its highest perfection in Europe and Africa. While there is scarcely a species of Asiatic wine known to commerce, some of the highest priced wines in Europe are manufactured from vineyards in latitude 48 and 50. Careful tending and manuring, and the treatment of the wine in the casks and in the cellar, seem to have done every thing. We have as many varieties of the grape as any part of the world, indigenous to our own country, and growing luxuriantly wild in wood and prairie. The greater part of them however remain uncultivated, without the least value being attached to them by our farmers. Yet, strange to say, almost every experiment which has been made with our indigenous grape, has succeeded. Good wines, far superior in quality to the ordinary hocks and clarets imported into this country, are now made from pure indigenous grape, in many portions of Pennsylvania, Ohio, Kentucky, Indiana, Illinois, Missouri, and doubtless in other States of the Union; while it is well known that wine has long been a staple article of production in the valley of the Rio Grande and the southern portion of California. The Catawba grape has shown itself admirably adapted to the manufacture of champagne, while the lighter sorts of it furnish an excellent article for the use of the table. I have been informed that natives of Europe, now adopted citizens of the United States, are willing to pay a higher price for them than for the usual qualities of French or German wines to which they are accustomed.

A very fair ladies wine is produced in North Carolina, from an indigenous grape, called scuppernong, peculiar to that State.

Similar experiments have been made in other States, and it would, indeed, seem as if the indigenous American grape were infinite in its varieties, and its culture better adapted to the soil and climate of this country than that of any other kind of grape imported either from Europe, Africa or the Canary Islands. In view of these facts, it is certainly no wild conjecture to suppose that the United States will, in a very short time, produce good wine, so cheap, and in such abundance, as to render it a common and daily beverage. Such a result, is not to be deprecated on the part of those most scrupulous on the subject of ardent spirits, for it is a well established fact, verified by the observation of every day, that the population of wine growing countries, is noted for sobriety and temperance. The most sober people of the old world, are in the wine growing countries of southern Europe, where the article, like water, is placed on every table, free of cost, but an extra charge made for coffee and a very exorbitant one for tea. They scarcely ever indulge in it to excess, while in northen Russia, where ardent spirits are used as substitutes for wines, intoxication is the prevailing vice; the example having been set by no less illustrious a person than Peter the Great.

I am now about to say a few words on a very important branch of husbandry, of peculiar interest to the American farmer. I allude to the growth of wool; an article which in no small degree affects our foreign and domestic exchanges. So far as experience has demonstrated, large portions of our country are admirably adapted to the growth of wool. In the production of no other article has there been so great an improvement in quantity and quality. Our early attempts at wool growing were almost exclusively confined to the inferior breeds of sheep, and the coarser qualities of wool, under the prevalent impression that the Saxon, Merino, South Downs, and all other finer qualities, could not be raised in this country. Recent experiments, however, go far to show that the finer qualities of wool can be produced in this country, by similar care and attention to the breed and culture of the sheep, as well as in any part of Europe, and to an extent far beyond our present demand. The hills of New England, New-York and Pennsylvania, have been shown to be well adapted to the raising of sheep, and it can hardly be doubted that the mountains of Virginia, North Carolina and other Southern States, are equally favorable to the same culture.

Wool and sheep-growing are also becoming an important branch of industry on the Western prairies, and it is highly probable that the regions best adapted to them, will yet be found between the Mississippi and the Pacific, in the valleys and upon the great plains, on both sides of the Rocky Mountains. Those regions are particularly adapted to grazing. They are, for the most part, elevated, dry and healthy, abounding in rich grasses and pure water. The extent of country to which I refer, embraces an area more than twice that of the original thirteen States of the Union, and is destined to be occupied by an intelligent, industrious and energetic race of men, not inferior, in any respect, to those who inhabit the old States. Nature has designed it for the habitation of an agricultural people, and grazing must be their predominant pursuit.

In the early stages of the woolen manufactures of Europe, the finer qualities of wool were almost exclusively supplied by Spain, and the belief existed there, as it did here, that no other country could supply the same quality. The northern climate, it was thought, would impair the fineness of the staple. But the Merino sheep introduced into England soon dispelled that prejudice, and their introduction, at the beginning of the present century, into Saxony and Silesia, established the fact, that proper care and cultivation will do more in this branch of husbandry than mere climate or other favorable adventitious circumstances. The Saxon Merino, for the purpose of wool-growing, is now far superior to the Spanish, and its wool brings a much higher price in the principal markets of England, France and Belgium. Indeed the finer qualities of wool are now almost exclusively supplied by Germany, while Spanish Merino wool has almost entirely disappeared from the wool markets of Europe.

The history of wool-growing and sheep culture in Europe, is full of valuable instruction to the American farmer. It shows what knowledge, diligence and care can accomplish against adverse climates and indifferent soils. The lesson is full of encouragement to us, and has already stimulated the emulation of our husbandmen. If I can read the future of this country, wool, in a very few years, will become as much an article of exportation as cotton, provisions and breadstuffs, and this notwithstanding the powerful rivalry which our wool growers on the Pacific, will find in the progress of wool-growing in Australia.

There is one more species of industry, lately come into use as an incident to agriculture, which I deem of sufficient importance to recommend to the attention of your society. It is the manufacture of oil and candles from the fat of the "prairie whale," vulgarly called the hog. The process of manufacture of these articles is a Western discovery, and is leading to important results in the agriculture and commerce of our country.

The uses to which lard oil may be applied are almost infinite. It was first employed as a substitute for lamp oil and sperm candles; but was gradually made to take the place of almost every species of animal fat, or vegetable oil, employed in manufactures, and is now most extensively used in all kinds of machinery. It is also introduced to a very large extent, in many branches of domestic economy, and when refined and properly prepared, is used even in the shape of a condiment of the table, or an indispensable article of the toilette. Lard oil, it is said, is largely exported to France, and after undergoing various chemical operations, re-imported into the United States, and sold in various metamorphoses, as salad oil, pomatum, or bear's grease.

I know not whether I am permitted to press these considerations for the purpose of stimulating competition; but I feel quite certain that even the ingenuity of European chemists, will, in due time, find its match in the indigenous "Yankee ingenuity" of the United States. Meanwhile I am glad to see the lard oil manufactories flourish, having no apprehension that they will ever seriously interfere with the whale fisheries of New England, the great school of our sailors, and the great nursery of our navy. On the contrary, it appears that sperm oil, notwithstanding the competition of lard, is still commanding respectable and remunerating prices; its superior qualities and the valuable uses to which it may be applied, operating quite as much in its favor as the diminished number of whales, which compels our hardy fishermen to seek for them in higher and more dangerous latitudes.

I would now say a few words on the growth of timber, a subject much neglected by our countrymen.

Yet timber is one of the most valuable productions of the soil, and an indispensable requisite to improvement and civilization of man. No country on earth, is, in this respect, more distinguished than ours. None can boast of such a variety of forest trees, adapted to the various uses of farming, the mechanic arts, architecture and ship building. In no other country do we find such magnificent shade trees, such extensive and superb primeval forests, and in no part of the world are the re-productive powers of the soil less exhausted than in our own. Yet, with all these incalculable advantages, and with our unbounded coal fields, the want of firewood is already felt in some districts which like the prairies of the West, are naturally destitute of timber, or in which locomotives and steamboats are consuming the article faster than it can be reproduced in the ordinary course of nature. There is also reason to believe that the extreme desire of pressing civilization forward, and of fertilizing the wilderness in the shortest time, induces many a hardy pioneer of the West to enter somewhat enthusiastically on the "extermination" of our woods, when considerations not merely poetical, but economical and practical, would in more than one instance call out to him, "Woodman, spare that tree!"

Trees are not merely useful and ornamental, but also by their mere existence—by the breathing of oxygen—eminently conducive to health. They are the companions of man, as much so as some of the domestic animals, and have, as such, acquired a certain right to his protection. Many localities which I could name, especially near the sea coast, have been completely shorn of timber: and experience has shown that a forest once entirely cut down, will not grow up again and re-produce the same kinds of timber. Much inconvenience is now felt in consequence, and that evil is progressive, threatening the comforts and interests of farmers, mechanics, and all classes engaged in industrial pursuits.

In most countries of Europe, the preservation of forests, by only partially cutting down the timber, and selecting for that purpose only those trees, the removal of which facilitates the growth of the young trees, by which means the same species of timber can be reproduced almost *ad infinitum*, without any perceptible deterioration in quality, is reduced to a science, taught in Academies and Colleges.

And although we may not, in this country, feel the necessity of husbanding our almost countless resources of the forest, yet more attention than has hitherto been paid to the subject, is certainly due to it. It is to such Societies as yours, I submit this suggestion. It is to your zeal, wisdom and experience, that the country may confidently look for the prevention of these evils.

The limits of this discourse will not allow me to refer to the subject of breeding domestic animals, but I cannot omit to bring to your notice a most valuable quadruped—"the ship of the desert"—for the introduction of which an appropriation was proposed in the last Congress. I have no manner of doubt that the Camels which our government are about to import from Arabia, for the transportation of military stores, will soon become domesticated in the sterile regions and steppes of the far west. It may, in time, prove a valuable auxiliary to our internal commerce, and a very convenient, though comparatively slow, means of communication, between distant territories.

The camel of Arabia is, to all intents and purposes, a domestic animal; fulfilling the joint functions of the horse, the ox and the sheep, and will, no doubt, enter largely into the domestic economy of our people. Camels' hair, and the hair of the Angora goat—an animal which I yet hope to see introduced into the Alleghany and Rocky Mountains—are the raw material employed in many of the most valuable tissues of the East, and there is no reason to doubt, that with the same raw material at our command, and with the aid of suitable machinery, our ingenious and enterprizing countrymen would, in due time, furnish similar if not better, fabrics.

I must now apologize for briefly introducing a topic, not legitimately connected with agriculture, and not properly coming within the scope of your society. I would gladly avoid it, if its introduction were not, in some degree, necessary, to complete the cycle of ideas which have suggested these reflections. I cannot close my remarks without referring to the mineral wealth of our country.

America is as rich in minerals as in soil, and produces all valuable and useful metals in the greatest abundance. Iron is not confined to any particular locality. It is found in various parts of New England and New-York; it extends throughout the whole state of Pennsylvania and the mountain regions of Maryland, Virginia and North Carolina; it exists in large quantities in the states of Missouri, Ohio, Kentucky, Tennessee and Illinois, and on Lake Superior; furnishing, every where, the levers of civilization to an industrious and energetic people.

The coal regions of the United States includes Pennsylvania, parts of Maryland, Virginia, North Carolina, Georgia, Alabama, Tennessee, Kentucky, Missouri, Iowa, Illinois, Indiana and Ohio, and covers an area larger than the united kingdom of Great Britain and Ireland. Lead and zinc are found in almost every portion of the United States; but in inexhaustible quantities in Illinois, Missouri, Iowa and Wisconsin. Copper is found, to some extent, in various parts of the Union; but the great copper fields are on the borders of Lake Superior, and in New Mexico. Gold and silver are found in California, Oregon and New Mexico, and along the range of the Alleghany mountains in Virginia, North Carolina and Georgia.

One great peculiarity of the Mining regions of America, and especially those of coal, iron and lead, consists in the remarkable fact that the mineral is found in large quantities beneath the richest and most productive soil; promising, at the same time, a rich harvest to both the miner and the husbandman. We not only produce the minerals necessary to the construction of tools, agricultural implements and machinery, in an advanced state of industrial development; but also the precious metals in such abundance as will, eventually enable us to regulate the standard of values, and to control the commerce of the world. It is maintained, by some writers on the subject, that mining, if not a branch of agriculture, is at least a kindred pursuit. The agriculturists draw from the earth the organic power which sustains vegetable life—the miner delivers her of the treasures long accumulated in her lap. Mining, like the pursuit of agriculture, nerves the arm, hardens the body, and renders it capable of great physical exertion. A knowledge of mineralogy, geology and chemistry, is indispensable to the successful pursuit of both branches of industry, and will enable the farmer to look for new sources of wealth beneath the soil he cultivates; while it will induce the miner occasionally to turn his attention very profitably to the external surface of the vaults that cover his mining operations. The division of labor, has, no doubt, its advantages, as regards the mere cheapness of production; but it is less conducive to the development of the mind, and is rarely applicable to a sparsely settled country.

In thus cursorily reviewing some of the chief articles of Agricultural and Mineral productions, which form the basis of our foreign exchanges, and regulate in a great measure, also the domestic exchanges of the different states of our own confederacy, the question may arise, how far the establishment of proper institutions or the improvement and better administration of those already in existence, may aid in the dissemination of knowledge among the great body of our industrious and independent cultivators of the soil. The subject is an important one, and appears, thus far, to have excited but little public attention.

It would seem, too, as if our diplomatic and consular systems were organized, simply in regard to the great interests of commerce and manufactures; but could they not be made equally subservient to the mother interest of agriculture and its co-ordinate branches? While our Consuls report on the commerce and manufactures of foreign countries, would it not be well to require them to report also on the different agricultural productions of those countries, and the improvements which, from time to time, may be introduced in their culture? Might they not be made to furnish detailed accounts of the different modes of cultivation, the manner of preserving crops, the agricultural implements in use, and the various kinds of manures resorted to as means of preserving or restoring soils? Could they not be induced to report on all the variety of fruit, shade and ornamental trees, and forward specimens of seeds, plants, roots and bulbs, for gratuitous distribution, accompanied by proper directions for their use? An occasional paper on the domestic animals of different countries, and the mode of breeding them, and improving the breed, would be particularly acceptable, should the official business of the Consul admit of such useful and interesting digressions.

These reports would not be expected to be made quarterly, as are those on commerce and manufactures. An annual paper would comprehend all that is desirable, and would certainly be no great tax on the Consul's time and patience. In many instances all the materials for his report would be readily furnished him by the official politeness of the government to which he is accredited, and in others he would find all the required information already collected in printed form.

By such simple means a vast amount of information from all parts of the country, could be collected, which in your hands and in the hands of other corresponding associations, would be a most powerful auxiliary in the dissemination of agricultural knowledge. And I would, in connection with this subject, respectfully suggest the propriety of establishing a great NATIONAL AGRICULTURAL SOCIETY, which, in immediate communication with the Agricultural Societies of the different States and Territories of the Union, and with the Patent Office, or some other appropriate Governmental Bureau, might easily possess itself of all the necessary information, to present in its annual report, an elaborate and comprehensive view of the agricultural condition of our whole country.

That society would also be the proper medium for receiving the specimens of seeds, plants, bulbs, &c., forwarded from foreign countries by our consuls, together with the collections which, under existing regulations, our navy is in the habit of making, and of distributing among the different States and Territories.

The National Agricultural Society would also be the proper channel of communication, and of effecting agricultural exchanges, between the several local societies of the United States, and the various agricultural and learned associations in foreign countries. It would, in fact, be the great center of agricultural information which would diffuse knowledge in a thousand different directions, over the whole length and breadth of our land, and to which every farmer could confidently apply for advice and instruction on any subject connected with his profession

And here I may pause to inquire whether the Smithsonian Institute, at the seat of the National Government might not, *ex officio*, become a co-laborer and efficient assistant of the National Agricultural Society, in all its literary and scientific branches? Might not the Institute aid the Society in its periodical publications, and, in conjunction with it, diffuse the greatest amount of "useful knowledge among men." Surely, the philanthropic intention of the worthy founder of that institution, could not be carried out in a more suitable and effective manner, than by making it thus subserve the great interests of agriculture in all its branches. Whatever its present usefulness may be, it can perform no higher duty than contribute in the most efficient manner, to the perfection of that species of human industry, which is the parent and promoter of all others, and on which the safety and permanence of our institutions rest as on their broadest foundations.

Mr. President and Gentlemen, in bringing this discourse to a conclusion, I am not insensible to the magnitude and importance of my theme. I have approached it with diffidence, before an audience critically observant of its great practical and philosophical truths, and have obeyed your flattering request with a consciousness that the noblest pursuit of Man demands a broader and higher reach of thought than I have found time and opportunity to bring to its elucidation. I have sought at least to show, not only the dignity and value of your calling, in its influence over the destiny and elevation of our country, but to enforce the great truth, that a common interest links together, throughout the diversities of soil, of climate, and of production, the noble fabric of American Industry.

In taking leave of such a theme, let me say that you may well rejoice in your pursuit. You may well rejoice in its triumphs—the peaceful triumph of Labor, of Art, and of Science. You may recall with pride that illustrious race of cultivators, who from Cincinnatus to Washington, graced and ennobled Agriculture, and which in turn graced and ennobled them. You may congratulate yourselves upon the condition and attitude of your Society. If in the rank of American States, New-York holds a lofty position, the labors of its State Society will be the more widely productive of benign results, not only in promoting and advancing its own husbandry, but its bright example will be felt in all quarters of the Republic.

Let me, then, urge you to renewed and unremitted effort—to continued zeal and emulation in the discharge of duties to your State and Country, which bring with them the blessings of God and the gratitude of Men. As the dews from Heaven refresh and fertilize the earth, and gladden the heart of the husbandman, so will your labors, steadily pursued, wisely directed, and liberally disseminating the seeds of intelligent observation and experience, bring forth a rich and abundant harvest.

New-York State Agricultural Society.

AWARD OF PREMIUMS.

SHORT HORN BULLS.

Judges.—Hon. Adam Fergusson, Ch'n, Woodhill, C. W.; John Wade, C. W.; George Miller, Markham, C. W.

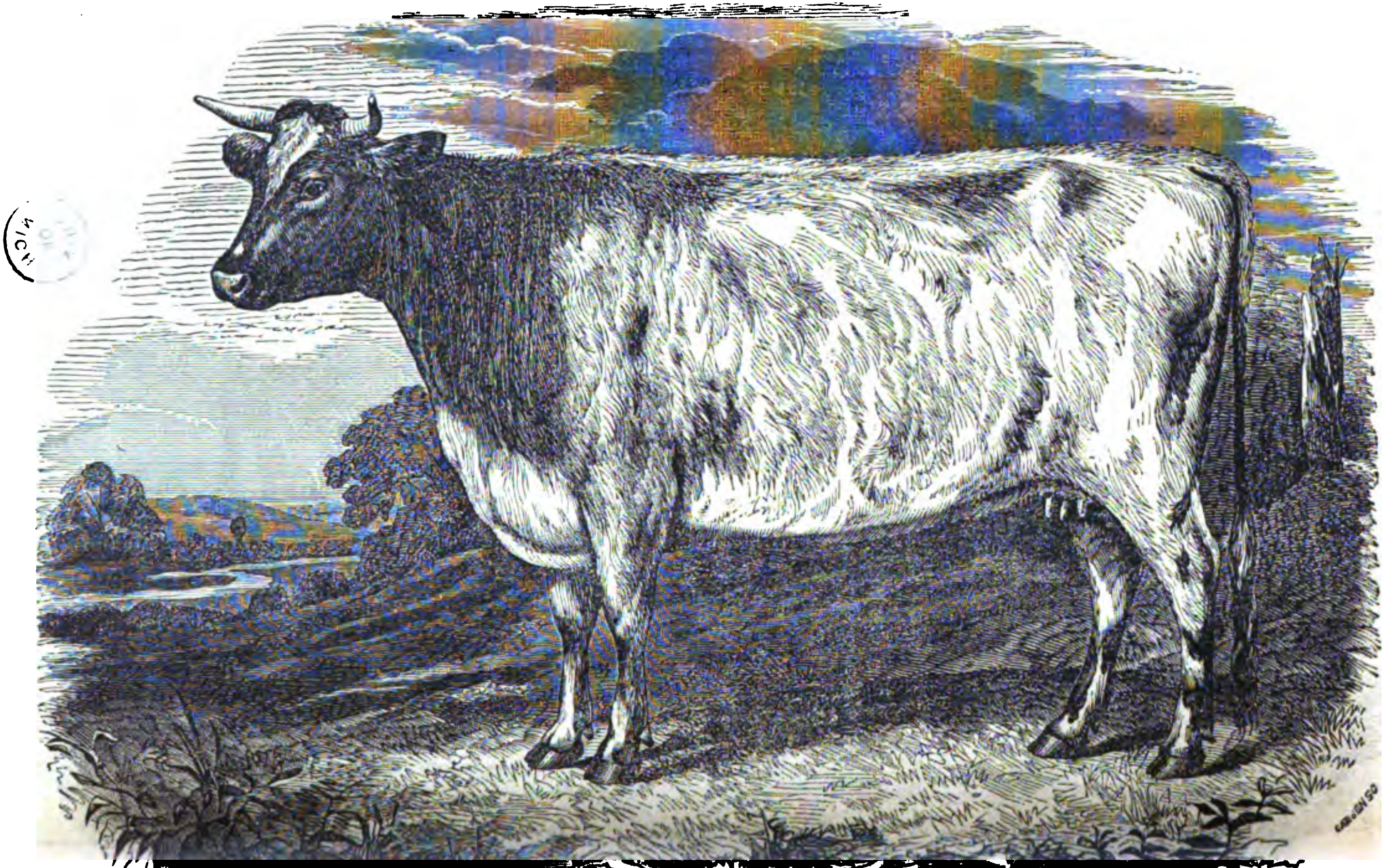
Best bull over 3 years old, Sherwood & Stevens, Auburn; imported bull, "Earl Seaham," $25. 2. L. G. Morris, Fordham; "Lamartine," $15. 3. Lewis F. Allen, Black Rock; "Exeter," $5.

Best 2 years old bull, L. G. Morris, Fordham; "Lord Eryholm," imported bull, $20. 2. W. T. & N. Chappel, Avon; "Young Splendor," $10. 3. J. G. Peck, West Bloomfield, $5.

Best 1 year old bull, J. M. Sherwood, Auburn; "Vane Tempest," $15. 2. E. W. Sheldon, Sennett; "Kirk Leavington," $10. 3. L. G. Morris, Fordham; "Powhattan," $5.

Best bull calf, J. M. Sherwood, Auburn; "Faugh a Ballagh," $10 2. Aaron Barber, Avon, Trans. and $3. 3. John R. Paige, Sennett; "Tromp," commended. 1 year old bull, "Antler," Daniel C. Monroe, Elbridge; commended.

The Judges express the high gratification afforded them from the visible and rapid advances made in this important class of live stock. The duty assigned them, was at once perceived to be no ordinary one—whether they have been successful in the justice of their awards, is not for them to say, but they claim the confidence of the Society for honest impartiality in their judgment. They have performed their duty in a careful anxious and unbiassed spirit, and believe that in no case will they be found far from the mark. The Judges would impress upon the Society, the absolute necessity



Short Horn Heifer, the property of N. J. Becar, Long Island, winner of the *First Prize*, as a one year old, at Rochester, 1851

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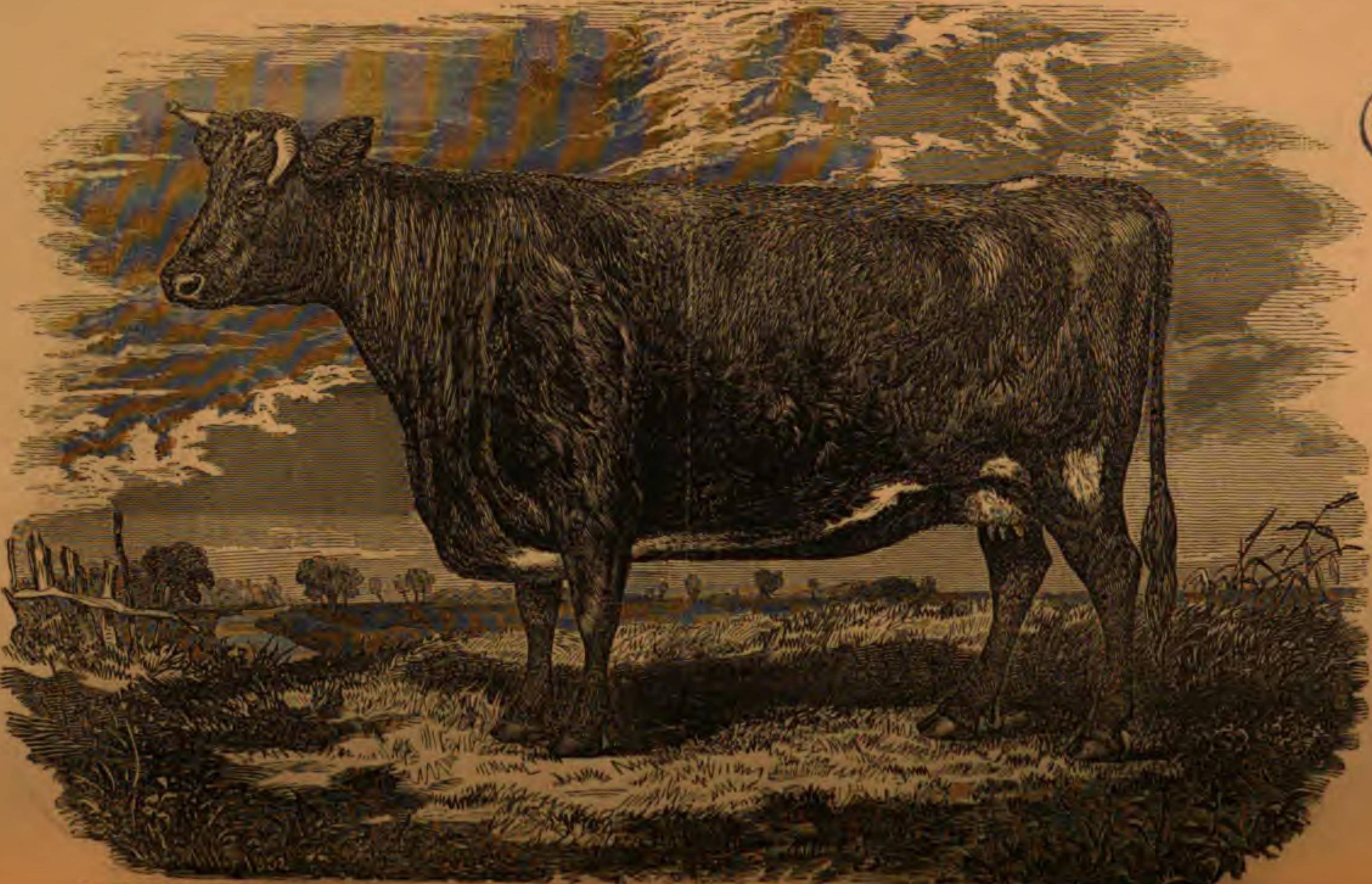


"**AZELIA**"—Short Horn Cow, the property of L. G. Morris, Mount Fordham; winner of the *First Prize* of $25, at Rochester, 1851.

of enforcing a rigid adherence to the production of regular, satisfactory pedigrees, in all the classes of thorough-bred stock. They would, in adverting to a portion of the stock exhibited, "in full dress uniform," remark, that presenting animals pampered by high feeding, *will not exactly meet the views or means of the industrious and independent farmers* of New-York.

The Judges, the Exhibitors and the Society, are under great obligations to W. H. Sotham, the Superintendent of this department, for his services. The arrangement of the ground, with the *arena* for the cattle, and a stand for the Judges, was most admirable; upon former occasions, the Judges have been precluded from free communication and conversation with each other, from the pertinacious intrusion of strangers or parties interested in the stock. The Judges were on the present occasion relieved from all such annoyances, and they strongly recommend in future, a strict adherence to this arrangement.

SHORT HORN COWS.

Judges.—George Cadwallader, Ch'n, Philadelphia; James C. Kinnaird, Lexington, Ken.; Henry Parsons, Guelph, C. W.; Thos. Bell, Morrisania; E. P. Prentice, Albany.

Best cow over 3 years old, L. G. Morris, Fordham; "Azelia," 6 years old, $25. 2. L. G. Morris, for his imported cow, "Oxford." 7 years old, $15. 3. S. P. Chapman, Clockville; for his cow "Ruby," 6 years old, $5.

Best 2 years old heifer, L. G. Morris, Fordham; for his imported heifer "Oxford," $20. 2. S. P. Chapman, heifer "Duchess," $10. 3. Lewis F. Allen, Black Rock; "Lydia," $5.

Best 1 year old heifer, N. J. Becar, Long Island; imported heifer "Apricot," $15. 2. J. M. Sherwood, Auburn; "Pansy 4th," $10. 3. S. P. Chapman, heifer "Ruby 2d," $5.

Best heifer calf, S. P. Chapman, heifer calf "Hilpa," $10. 2. E. W. Sheldon, Sennett; "Lucilla 4th," Trans. and $3.

Best 3 cows and 3 heifers, owned by exhibitor, S. P. Chapman, 3 cows, "Charlotte," "Daisy 3d," "Ruby;" 3 heifers, "Duchess," "Ruby 2d," "Hilpa," $25.

The Judges, in awarding the premiums, have been guided by a rigid inquiry into "the purity of their blood" of the animals offered for competition, selecting them with a view to their profit, not only to the butcher, but also for the dairy. They would notice with special commendation the cow Pansy 3d, belonging to Col. Jno. M. Sherwood, who, according to the opinion of some of the Judges, was not only entitled to a premium, but even to stand well on the list.

In the class of yearling heifers, the Judges had more difficulty than in relation to any other. There were quite a number presented, of very great and nearly equal excellence, and it was only after repeated comparisons and much discussion, a majority came to the conclusion already given They however agree in commending in the highest terms the heifers "Red Rose the 4th," and "Young Lady Sale," belonging to Col. Sherwood.

Devons—Bulls.

Judges.—Joshua R. Lawton, Ch'n, Great Barrington; Pomeroy Jones, Oneida; James Battersby, Albany.

Best bull over 3 years old, W. P. & C. S. Wainright, Rhinebeck, $25. 2. E. N. Thomas, Rose, certificate—his bull having previously received the same prize. 3. M. C. Remington, Sennett, $5.

Best 2 years old bull, L. H. Colby, Scipio, $20. 2. Samuel Baker, Edmeston, $10. 3. Albert Allen, Jordan, $5.

Best 1 year old bull, L. H. Colby, Scipio, 15. 2. Ambrose Stevens, New-York, $5.

Best bull calf, Miles Vernon, Stafford, $10. 2. Ambrose Stevens, New-York, Trans. and $3.

Seventeen bulls, three years old and upwards, were offered for premium, most of which were worthy of high commendation, and the committee had some difficulty in deciding upon the true merits of some of these beautiful animals, as they consider size in a Devon bull to be very desirable and important to the breeder. At the same time, if you have size and have not the desired requisite qualities that will constitute a perfect animal, it would be better to obtain one as near perfection as possible, with medium size, as it is easier to increase the size and retain the fine handling qualities and symmetry, than it is to breed into shape from a coarser animal having the other desired qualities. From these causes arose the difficulty your committee had in making the selection from seventeen beautiful animals, competing for the Society's premiums, and only three of those could be so honored. The great object of your committee was to select the largest of those animals that embraced the most good points, with the most perfect symmetry.

There is one quality in the bull which should never be lost sight of, and yet very hard to be defined or correctly ascertained, that is, the milking qualities that he may possess, as derived from the sire and dam from which he was bred. The great value that a cow possesses, is her milk, both quantity and quality, and it is as important that a bull should possess that quality as it is that the cow possess it. Breeders and importers of blooded cows and bulls should be very careful to select their animals in reference to this great and important quality.

Seven bulls that were two years old, entered the field of competition, the most of which were of a high order, both as it respects size and symmetry. There were in the field nine bulls that were one year old; these young, smooth, fine haired, mahogany stamped animals, though not numbering with the three years old and upwards, yet will, with proper care, stand in a contest on the field of competition, at their ripened age of three years old, unmatched and without a rival.

But a large force was exhibited of the younger class; twenty-five in number, which were entered as competitors for the Society's premium, besides many others, for show, of a cross breed, some of which would have graced the exhibition of any State, at their annual fair. But there were only two premiums to be awarded on this class of beautiful young animals, whose promise is great with proper care. At the first view, many might feel that the Society should have put more money into the hands of their committee, to have encouraged this last class of young Devons; but as there is so much risk in calves, respecting their keeping—their shape, and growing into shape as they mature—that it is hardly worth while to appropriate money to much amount, to be given out by a committee as a premium, or premiums, on animals that change as much as calves do in their growth.

Your committee would express their gratification in viewing, as a whole, the stock of Devon bulls, and would say, without fear of contradiction, that the State of New-York has never, at any exhibition since its commencement, graced its show grounds with as many fine animals as the present. The encouragement held out by the Society to importers, and the rearing of blooded stock, is liberal, and calculated to improve, to a very great extent, the stock of her own State, as well as the rest of the Union and the neighboring Provinces.

DEVONS—COWS.

Judges—R. C. Gapper, Chairman, Thornhill, C. W.; Wm. F. Coan, Lodi, Seneca county; E. S. Hubbard, Youngstown, Lorrain county, Ohio.

Best cow over 3 years old, W. P. & C. Wainright, Rhinebeck, "Nonpareille," $25. 2. L. G. Morris, Fordham, $15. 3. A. Stevens, New-York, $5.

Best 2 year old heifer, R. H. Van Rensselaer, Morris, Otsego co., $20. 2. L. G. Morris, Fordham, $10. 3. M. Vernon, Stafford, $5.

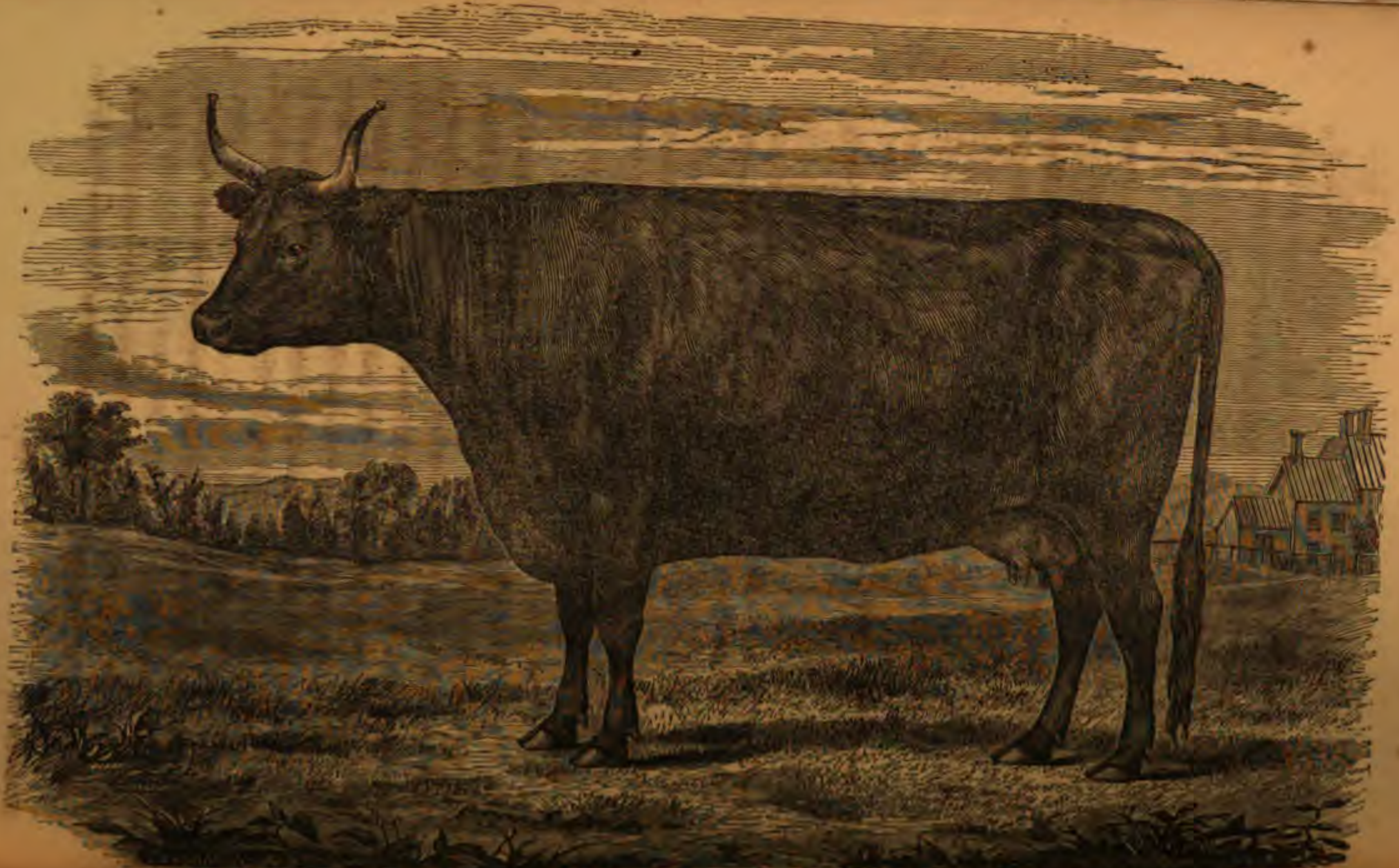
Best 1 year old heifer, A. Stevens, New-York, $15. 2. W. P. & C. S. Wainright, Rhinebeck, $10. 3. M. C. Remington, Sennett, $5.

Best heifer calf, R. H. Van Rensselaer, Morris, $10. 2. H. N. Washbon, Morris, Trans. and $3.

Best 3 cows and 3 heifers, E. P. Beck, Sheldon, $25.

Three cows by A. Stevens, highly commended. 3 cows and 3 heifers by Wm. Garbutt, highly commended. 1 Devon cow by J. W. Hamlin, highly commended. 1 Devon cow by S. Baker, Edmeston, commended. 1 two year old heifer by M. Vernon, commended. 1 yearling heifer by M. Vernon, highly commended. 1 two year old heifer by L. G. Morris, Fordham, highly commended. 1 yearling heifer by W. P. & C. S. Wainright, highly commended.

The Judges on Devon cows having carefully examined the numerous and excellent animals in this class, have found great difficulty, in several instances, in coming to a decision, owing to the great similarity in the excellent points and beauty of the animals exhibited.



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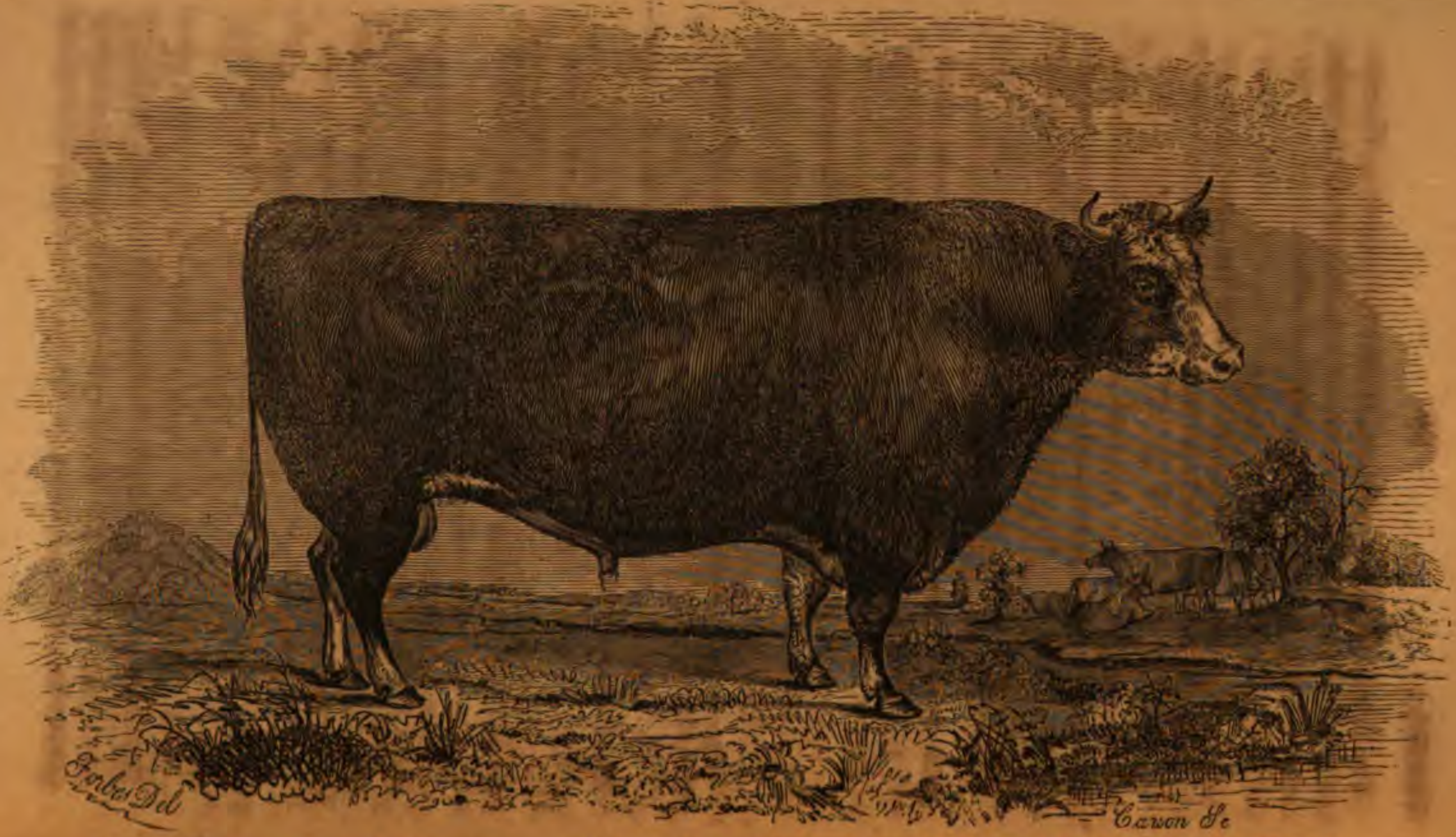


HEREFORD BULL, **"TROMP"**—the property of Allen Ayrault, Geneseo; winner of the *First Prize*, $25, at Rochester, 1851.

The committee were much pleased with the general appearance and number of this valuable class of animals, and of the great improvement that has taken place in this breed, within the last few years, but they beg leave to suggest to some of the most extensive breeders, that their stock would be much improved by a judicious cross from other animals of the same class.

In awarding the prize for the best 3 cows and 3 heifers, to E. P. Beck, the Judges were influenced by the uniformity and many good qualities of these animals, and by their general appearance altogether.

The cows exhibited by Mr. Stevens, were highly commended, and the cows and heifers exhibited by Mr. Garbutt, were well worthy of notice.

R. C. GAPPER, *Chairman.*

HEREFORDS.

Judges.—E. P. Beck, Chairman, Sheldon; Thomas Bell, Westchester.

Best bull over 3 years old, Allen Ayrault, Geneseo; "Tromp," $25. 2. Rowland Sotham, Black Rock, $15. 3. William H. Sotham, Black Rock, $5.

Best 2 year old bull, Gen. R. Harmon, Wheatland; "Wantage," $20.

Best 1 year old bull, Lewis F. Allen, Black Rock, $15. 2. Rowland Sotham, Black Rock, $10. 2. Allen Ayrault, "Wooded," Transactions and $3.

Best cow over three years old, W. H. Sotham, Black Rock; "Short Tail," $25. 2. W. H. Sotham, Black Rock; "Lily," $15. 3. Rowland Sotham, Black Rock; "Sally," $5.

Best 2 years old heifer, Allen Ayrault, Geneseo; "Jenny" $20. 2. W. H. Sotham, Black Rock; "Blue Bell," $10. 3. W. H. Sotham, Black Rock; "Nelly," $5.

Best 1 year old heifer, Allen Ayrault, Geneseo; "Snowdrop," $15. 2. W. H. Sotham, Black Rock; "Bloomy," $10. 3. W. H. Sotham, Black Rock; "May Flower," $5.

Best heifer calf, Allen Ayrault, Geneseo; "Myrtle," $10. 2. W. H. Sotham, Black Rock; "Woodbine," Transactions and $3.

Best 3 cows and 3 heifers, W. H. Sotham, Black Rock, $25.

(The Judges expressed their regret that so few animals were on exhibition, in this class.)

AYRSHIRES.

Judges.—Peter H. Brink, Chairman, Ulster county; Abraham Knickerbocker, Rensselaer county; John West, Oneida county.

Best bull over 3 years old, Ezra P. Prentice, Albany, $25. 2. William Somerville, Ellicottville, $15.

Best 1 year old bull, Ezra P. Prentice, Albany, $15.

Best bull calf, W. A. Mills, Mount Morris, $10. 2. Ezra P. Prentice, Albany, Transactions and $3.

Best cow over 3 years old, W. A. Mills, Mt. Morris, $25. 2. Ezra P. Prentice, Albany, $15. 3. Ezra P. Prentice, Albany, $5.

Best 2 years old heifer, Ezra P. Prentice, Albany, $20.

Best 1 year old heifer, Ezra P. Prentice, Albany, $15. 2. Ezra P. Prentice, Albany, $10.

Best heifer calf, Ezra P. Prentice, Albany, $10.

NATIVE AND CROSS, BETWEEN NATIVE AND IMPROVED CATTLE.

Judges.—Jeremiah Brown, Chairman, Orleans county; Norton S. Collin, Columbia county; Chauncey Brinsmaid, Orleans Co.

Best cow over 3 years old, John Brown, Auburn, $20. 2. John Brown, Auburn, $12. 3. Allen Ayrault, Geneseo; "Fancy," $4.

Best heifer, 2 years old, Lyman Turner, Geneseo, $15. 3. John Muir, sen., Hamilton, $10. 3. Jasper Barber, Avon, $3.

Best 1 year old heifer, J. Freeman, Geneseo, $10. 2. D. H. Albertson, Lima, $8. 3. Allen Ayrault, Geneseo; $3.

Best heifer calf, Donald McHardy, Rush, $3. 2. Jacob Gould, Transactions.

2 grade cows, Miles Vernon, Stafford; premiums $10, and $5.

WORKING OXEN.

Judges.—J. D. Ledyard, Jr., Chairman, Cazenovia; Hiram Clift, Onondaga; Daniel M. Crowell, Oneida; Martin Springer, Rens.; William Logan, Broadalbin.

Best yoke of oxen, W. W. Wadsworth, Geneseo, $20. 2. E. Sheldon, Sennett, $15. 3. Daniel S. Baker, West Bloomfield, $5.

Commended.—Luther Comstock, Kirkland, Oneida. Erastus Osmer, Rutland, Jefferson. E. H. Albertson, Lima, Livingston.

The Judges, in making up their awards, were governed by the general appearance of the cattle, for work, close matching, and fattening qualities, believing that cattle intended for work, are finally to be prepared for market, and the importance of having those that are kind and good feeders, must be obvious. The competition, in this class, was very severe, and all the cattle exhibited, were of prime quality, and did honor to the State.

STEERS, THREE YEARS OLD.

Judges.—Darius Knapp, Chairman, Panama; E. W. Thompson, Toronto, C. W.; Apollos Hitchcock, Erie county.

Best single yoke, James S. Wadsworth, Geneseo, $10. 2. W. T. & N. Chappell, Avon, $8. 3. David S. Baker, West Bloomfield, $3.

Highly Commended.—George Shepherd, Wheatland; Devon steers; Almon Benjamin, Centreville; Birdseye Holcomb, Sheldon; Luther Comstock, Kirkland.

STEERS, TWO YEARS OLD.

Judges—William Slocum, Chairman, Northampton; Charles Esselstyne, Columbia county; Abraham Knickerbocker, Rensselaer county.

Best single yoke, Geo. Shaffer, Wheatland, Monroe county, $10. 2. Daniel S. Baker, West Bloomfield, $8. 3. James S. Wadsworth, Trans. and $3.

To boys under 16, training yoke of steers, J. G. Ramsdell, Perinton, Monroe county, Trans. and $3.

Commended.—George S. Shaffer, Wheatland, special premium of $8 for two year old steers.

The exhibition in this class was very superior, and did great credit to the exhibitors and to the Society.

STEERS, ONE YEAR OLD.

Judges—Moses Eames, Chairman, Rutland, Jefferson Co.; Samuel H. Church, Vernon; C. S. Wainwright, Rhinebeck.

Best single yoke, John Muir, sen., Hamilton, $8. 2. C. Sheldon, Conquest, Cayuga Co., $5. 3. I. P. Stannard, Alexander, Trans. and $3.

To boys under 16, training yoke of steers, best, Vincent M. Lincoln of Alexander, Sil. Med. 2. Emery Shepperson, East Hamilton, Trans. and $3.

MILCH COWS.

Judges—Arden Woodruff, Chairman, Strykersville; Israel Lisk, Seneca county; Norman Kingsman, Cortland county.

Best milch cow, Gen. J. Gould, Rochester, a Diploma for his valuable grade cow. Donald McHardy, Rush, a Diploma for his three-fourths Durham dairy cow. James Upton, Greece, Diploma for Durham grade cow. David S. Earl, Salina, a Diploma for his grade cow.

FAT CATTLE, STALL-FED.

Judges—Henry Parsons, Chairman, Guelph, C. W.; Henry Felt, Earlville; James Battersby, Albany.

Best single ox over four, Hiram Sheldon, Sennett, $15. 2. George J. Pumpelly, Owego, $10.

Best fat cow over four, Robt. Fowler, Batavia, (highly commended,) $15. 2. Richard Wynn, Batavia, $10.

Best pair of fat steers, under four years old, Daniel S. Baker, West Bloomfield, $15. 2. James Upton, Greece, $12. 3. Daniel S. Baker, West Bloomfield, $8.

Best single steer, under four, James S. Wadsworth, Geneseo, $10. 2. Daniel S. Baker, West Bloomfield, $6.

Special.—J. W. Taylor, Lima, thorough bred Durham heifer, $25. George Shaffer, Wheatland, for his three spayed six year old three-fourth bred Devon heifers, of extraordinary fine quality, $30.

FAT CATTLE, ON HAY OR GRASS.

Judges.—Lester Barker, Ch'n, Oneida: Israel Boies, Cortland; Hugh Crocker, Oneida.

Single ox over 4 years old, Freeman Nye, Darien, 2d prem., $6.

Best pair fat steers, under four, E Sheldon, Sennett, $12. 3. Hiram Sheldon, Sennett, $5.

Best single steer under four, Ira Rix, Alexander, $8.

Best heifer under four, J. W. Hamlin, Aurora, $8. 2. E. Sheldon, Sennett, $3.

FAT SHEEP—LONG WOOLED.

Judges.—Elisha Briggs, Ch'n, Johnstown; James Suffern, Rockland Co.; Wm. J. Gilchrist, Saratoga.

Best fat sheep, Wm. Swails, Wayne co., $5. 2. John McDonald, Herkimer, $3. 3. Elias Barlow, Dutchess, Morrell's Shep.

MIDDLE WOOLED, OVER TWO YEARS OLD.

Best fat sheep, Thomas Hozebury, Niagara, $5. 2. Marvin Hopkins, Monroe co., $3. 3. Richard Peck, Livingston co., Morrell's Shep. *Two years or under*—Best fat sheep, Marvin Hopkins, Monroe co., $5. 2. W. S. Gypson, Oneida co., $3. 3. Wm. S. Gypson, Oneida co., Morrell's Shep. Z. B. Wakeman, Herkimer co., highly commended.

The Judges would especially notice some fine fat sheep, entered by John McDonald, as being decidedly of superior quality as to fatness, as also those of Mr. Wakeman. This is a very important department, and well worthy the attention of farmers, and the show this year indicates that an increasing attention is being given to it.

FOREIGN CATTLE.

Judges.—Nathan Brown, Ch'n.; R. K. Sanford, Wyoming; George Shaffer, Monroe.

Best short horn Bull, Hon. Adam Fergusson, Woodhill, C. W., Dip. and $15. 2. Ralph Wade, Port Hope, C. W., $10.

Best heifer or cow, Hon. Adam Fergusson, Woodhill, C. W., Dip. and $15. 2. Ralph Wade, Port Hope, C. W., $10.

Best Devon Bull, John Masson, Cobourg, C. W., Dip. and $15. 2. R. C. Gapper, Thornhill, C. W., $10.

Best Devon cow, R. C. Gapper, Dip. and $15.

Best Devon heifer, R. C. Gapper, $10.

Best Hungarian Bull, Roswell L. Colt, Paterson, New-Jersey, "Kossuth," Dip. and $15.

Best Hungarian cow, Roswell L. Colt, Paterson, New-Jersey, "Lady Don Briska," Dip. and 15.

Best Alderney bull, Roswell L. Colt, Paterson, N. J., Dip. and $15.

Best Alderney cow, R. L. Colt, Paterson, N. J., Dip. and $15.

FAT CATTLE.—W. Bishop, Oshewa, C. W., pair fine fat oxen, Dip.

HORSES.

FOR ALL WORK.

Judges.—George D. Wheeler, Ch'n, Deposit; George B. Rowe, Canastota; A. E. Kapp, Pennsylvania.

Best Stallion over 4 years old, Frederick Pister, Perrinton, "Young Magnum Bonum Eclipse," $25. 2. Caleb Gasper, Marcellus, "Prince Albert," $15. 3. M. L. Hungerford, Watertown, "Black Blucher," $5. 4. Robert Russell, Phelpstown, "Fox-hunter," Youatt.

Stallion, H. L. Hodge, East Bloomfield, "Morgan Bulrush," commended. Isaac M. Gillett, Clyde, commended. Hiram Sayles, Scottsville, "Perfection," commended.

BROOD MARES AND FOALS.

2. Rufus F. Pennel, Somerset, $15. 3. J. K. Ballentine, Chili, $5. 4. Stephen Cleveland, Penn Yan, Youatt.

SPECIAL PREMIUMS TO MORGAN HORSES.

1st premium, Charles W. Ingersoll, Lodi, "General Gifford," $15. 2. S. A. Gilbert, East Hamilton, "Morgan Hunter," $10. 3. J. D. Remington, Sennett, "Young Black Hawk," $5.

The whole number of animals presented for our examination was 114, of which 66 were stallions, over four years of age, and 24 mares, "with foal at the foot." We are gratified in being able to report our entire satisfaction in the exhibition of stallions; many of them were from imported stock, and almost the entire number were of a superior grade of horses, and showed conclusively the fact, that great care and attention had been bestowed in breeding and rearing them.

Another class exhibited were of heavy limbs and well proportioned body for the draft, yet too large for easy travellers, and therefore not suited "for all work." But far the greater number examined were of good size, both in body and limb, active, and many of them of beautiful color and coat, yet objectionable in some slight particular so as not to entitle them to a prize. Those to which the prizes have been adjudged, exhibit the most desirable qualities, being of proper size, having strong, yet well proportioned limbs, easy carriage, fine color, and mild disposition.

BROOD MARES.

It is with much regret that we are compelled to report that, in the exhibition of brood mares, we are sadly disappointed; very few, of the limited number presented for competition, have any superior qualities to recommend them. They are mostly of small or ordinary size, and in symmetry and form decidedly objectionable; having no peculiar marks, necessary for brood mares. Some, indeed, have colts which show the merits of the sire, yet most of them have marked their offspring after some defect apparent in the dam. These facts prove that the best mares of our country are not used for breeding; or, from some cause unknown, they are not brought here for exhibition. It is the decided opinion of your committee, that the stock of horses of our country can never be permanently improved until the brood mares are selected with care, and kept for this purpose. It is as unwise to suppose that good stock can be obtained from inferior mares, as from inferior horses. By the rules of your society, "applicable to animals," the several committees are instructed to "withhold premiums where the animal is not worthy;" acting under these instructions we feel under obligation to withhold the first premium offered upon "brood mares with foal at the foot."

There were also presented for examination several very fine specimens of the Morgan horse; but, being confined to the "horse of all work," they were not considered as strictly coming under that class, for want of size. The judges, however, are happy in being enabled to say that in point of symmetry, elegance of action and strength of muscle they are excellent, and would recommend special premiums to be awarded.

DRAUGHT.

Judges.—Zachariah Longyear, Chairman, Lima; William Stewart, Perth; William B. Alexander, Rochester.

Best stallion, over 4 years old, Moses H. Van Inwagen, Fairville, "Sampson," $25. 2. Hiram Hosmer, Bennington, "Hercules," $15. 3. Jacob Bower, Victor, "Young Sampson," $5. 4. William Reeve, Henrietta, "Gray Sampson," Youatt.

William P. Nottingham, Palmyra, horse "Young Sampson," having heretofore received the first premium, is now awarded a CERTIFICATE of the society, as the best horse in the class.

E. Nichols, Bethany, "Osceola," commended; Seth Paul, Bristol, commended; Stephen Powell, Lewiston, commended.

THOROUGH BRED.

Judges.—John B. Wheeler, Vt.; R. L. Denison, Toronto; W. D. Bowie, Md.

The Judges on *Thorough bred Horses* beg leave to present the following *Report*, prefacing the award of premiums, with a few remarks of a general character.

What is a horse wanted for? What are the duties he is required to perform? He is wanted for speed on the road, and for conveying heavy loads quickly. For speed he has no competitor, among our domestic animals—for draught, none but the ox. He is more expensive to keep than the ox; is kept at greater risk, and requires more constant care. He compensates his owner solely by his speed. The speed upon the road and celerity of movement with a load, sum up, in a word, the peculiar duties of the horse.

This attribute of speed depends upon a peculiar anatomical conformation, the more prominent characteristics of which are bones small in size, but fine in texture and hard; muscles tense and firm, *separately* round and prominent; an indisposition to accumulate fat; the secretives depositing muscle instead; vital organs large and powerful; limbs wide, clear, and sinewy; every muscle and tendon clearly defined; the joints clean and firmly knit; the hoofs of medium size, hard and tough; the shoulder slanting, giving ease of motion, and much more extended motion than the upright shoulder, and well wrapped with tense rope-like muscles; the rump straight, or nearly so; the stifle deep and full; the chest deep rather than wide; thus giving the most room for the motion of the lungs and the action of the heart; the flank deep, that the digestive organs may not crowd upon the lungs and heart.

The movements of the horse are all in accordance with mechanical laws, and the superiority of one form over another, so far as ease of action is concerned, depends solely upon the perfection of the mechanical relations of the bones and muscles. The angles, the centers of motion, on which the most depends, are those of the shoulder and thigh. They should be acute. The more obtuse, the greater the loss of power. Horses have been bred, for many generations, with a particular reference to such an anatomical development, as hinted at above, resulting in great speed, combined with great powers of endurance, and are known as blood or thorough bred horses. They have excelled, in speed and bottom, all other horses.

The nervous system of the blood horse has been disproportionately developed in some families, perhaps in the whole class. But, at present, the error, if error it is, stands, in a great measure, corrected, and those horses, in this class, which now stand the highest, are more tractable and docile than former generations, yet, at the same time retaining the speed, bottom and fire, when fully aroused, of their progenitors.

Now, since in the blood horse, is found the peculiar attribute of the horse, in its highest perfection, too much can hardly be said of the importance of a liberal dash of blood in all grades of horses. On the road it is necessary, and at the plow or the truck it will tell wonderfully. The farmer, with half or three quarter bloods, can plow his half acre a day more than with common farm horses. He can safely reckon that his *blood* will haul his load some miles further in a day than a common team. This is so. Theory points to it, and experience has proved it; and if the farmer can actually increase the value and efficiency of his motive power, without increasing the number of animals or expense in rearing and keeping, is it not as much a matter of good policy and good husbandry so to do, as to improve his land and raise larger crops by extra manure and extra tillage? Certainly it is; and while it is expensive at the outset to improve land, it costs no more to raise a good horse than a poor one.

In selecting animals for breeding, the first thing to be settled, is the kind of horse to be produced. This should be clearly determined in the mind of the breeder. He should know what he wants, or rather what he needs, and then should seek to produce it. The law, that "like produces like" is true, and will prove true, no less in regard to good animals and qualities, than bad ones. The anatomical structure of the horse and mare should be carefully studied and compared, before they are brought together, always keeping in mind the fact, that bad qualities are as easily and as surely perpetuated as good ones.

Rules without number might be given, by which breeders should be chosen. But the rules to be of any benefit, must be understood, and to be rightly understood, requires a thorough acquaintance with the anatomy of the horse. Then each one, who would breed good horses, should seek a full and intimate acquaintance with the anatomy of the horse, and when that knowledge is obtained, the rules for breeding will be of easy deduction. The importance of a full and complete pedigree is great to the breeder. He ought to know the history of his stock. He ought to know whether or not the animals have been bred, so long and with such care, that the perfections or imperfections, as the case may be, of the animal before him, have become fixed.

The display of thorough bred horses on the ground was small. Nineteen stallions, and two mares and colts were entered. Nine stallions only made their appearance, and one mare and colt, before the Judges. Seven of the nine stallions, and the mare and colt, were not passed upon by the Judges, in compliance with the rule, requiring them to reject "any horse with which there is not furnished a complete pedigree on side of sire or dam." In some cases, no pedigrees at all were furnished; in others, the pedigrees were so incomplete, that no reliance could be placed upon them, and when taken in connection with the appearance of the horses, furnished to the Judges, sufficient grounds for their prompt rejection from the class of thorough breds.

Of the two remaining, "Consternation," owned by J. B. Burnett, Esq. of Syracuse, is regarded as the best, and to him is awarded (he having received the first premium in this class before,) a Diploma. To "Pryor," owned by Samuel Baker, Esq. of Edmeston, Otsego co., is awarded the premium of $25.

"Consternation" is a horse of uncommon strength, constitution and action. He is symmetrical, compact, very muscular, graceful and easy in his action, and of great beauty in the general outline of his figure. For a thorough-bred, he is very powerful, and gives evidence of a strong, rugged constitution, which, combined with the great perfection of his form, makes him superior as a stock horse.

"Pryor" is a horse of very fine points, of great elegance of form, and very light on the foot. His muscles are well developed, and his bones well placed for a high rate of speed. With judicious breeding, he cannot but be of great value as a getter of fast horses. He is, altogether, a fine model of a turf horse.

A bay horse "Sir Henry," owned by Mr. Richmond, of Genesee Co., and a dark dappled grey horse of his get, owned by Mr. Kingsley of Onondaga Co., and bearing the name of his sire, were excluded from competition by the rule, requiring in this class, complete pedigrees. They are both valuable horses, of great muscular development, and in the class of "All work," would have competed favorably with any horses entered there. A three-years old chestnut colt, "Trustee," by "Imp. Trustee," thoroughbred, was entered for exhibition merely, by D. D. Campbell, of Schenectady. He is a colt of good promise, and will doubtless prove a valuable horse.

"Young Flying Childers," a four years old golden sorrel, by "Consternation," was also entered for exhibition, by his owner, Geo. Hammel, of Rome. He is one of the most finished animals on the ground, possessing that remarkable symmetry and compactness, muscular development, and graceful lively contour, so marked in his sire. "Plato Morgan," a four years old chestnut horse, was entered for exhibition merely. He is from a thoroughbred, ("Sir Charles;") mare, by the Vermont "Black Hawk." He is a superior animal, and the best on the ground having any claim to the name of Morgan. He shows the blood of his dam, and proves that the Morgans are susceptible of great improvement by crossing with higher blood. "Young Mogadore," bred and owned by A. Butler, Esq., of Wayne county, was not exhibited in compliance with the rules of the society, nor was the pedigree furnished complete. He is, however, worthy of commendation, showing marks of high blood and being a very finished, active, well muscled horse.

The horses were all well groomed; but the judges consider the grooming of "Consternation," by Wm. Whittaker, as worthy of special commendation.

THREE YEARS OLD STALLIONS AND MARES.

Judges—L. E. Smith, Chairman, Mechanicsville; Truman Boardman, Covert; Andrew Robinson.

Best stallion 3 years old, Wm. P. Nottingham, Palmyra, $20. 2. Andrew Hallenbeck, Caledonia, "Sweetbriar," $10. 3. Hiram

Sayles, Scottsville, "Emperor," Youatt. 4. Barnard Gilder, Prattsburgh, Steuben county, "Young Elegant," Trans.

Commended.—The horses exhibited by N. Morgan, of Victor; G. W. Green, Jordan; Alfred Empy, Johnsonburgh; S. Widner. Chili; John Robb, Toronto, C. W.

Second best mare, Wm. Reeves, Henrietta, brown, $10. 3. H. H. Kellogg, Clinton, Oneida county, sorrel, Youatt. 4. Stephen Mercer, Onondaga Valley, bay, Trans.

Two years old Stallions and Mares.

Judges.—John B. Wheeler, Ch'n, Burlington, Vt.; Wm. A. Bent, Shelba; Chas. Howe.

Best stallion, 2 years old, O. G. Pennell, Ridgeway, Orleans co., "Young America," $15. 2. Francis Winslow, Henrietta, "Magnum Bonum," Youatt. 3. Lorenzo Norton, Darien, "John Richards," Trans.

Best mare, Isaac M. Gillett, Clyde, "Fanny Morgan," $15.

One year old Colts.

Judges.—Hon. Levi Colvin, Ch'n, Cato; Jonah Sanford, Hopkinton; E. L. B. Curtis, Danby.

Best stallion, 1 year old, A. M. Starkweather, Eagle Harbor, $10. 2. John Striker, Chili, "Young Henry," Youatt. 3. J. C. Vail, of Royalton, "Black Hawk," Trans.

Best mare, Isaac M. Gillett, Clyde, $10. 2. Chas. W. Ingersoll, Lodi, "Jenny Lind," Youatt.

Commended.—Colts belonging to J. Dorr, Scottsville; Hervey Whalan, Delafield; John Jennings, Sweden; J. D. Adams, Brighton; Job Throice, Galen; Gideon Ramsdell, Perrinton; B. Ecklar, Penfield; R. Vanderhoof, Perrinton; Truman Bowen, Chili.

Matched Horses for the Carriage or Road.

Judges.—LeRoy Farnham, Ch'n, Buffalo; Nelson Thompson, Penn Yan; J. D. Wasson, Albany.

Best pair of matched horses, G. C. Baker, Rochester, Dip. and $15. 2. James Christopher, Buffalo, $10. 3. John Butterfield, Utica, Youatt.

Commended.—A. Bowen, Medina, 1 pair bays; T. Yorks, Lima, 1 pair chestnuts; G. Sheffield, Wheatland, 1 pair bays.

For Draught or Farm.

Judges.—Uriel H. Orvis, Ch'n, Massena; Ira Spencer, DeRuyter; Wm. F. Cuyler.

Best pair, Alfred Hale, Lyons, Dip. and $15. 2. Bay horses, Geo. Waffle, Gates, $10.

GELDINGS AND MARES.

Judges.—S. Britton, Ch'n, Nunda; J. C. Woodruff, Syracuse; Wm. Landon, Albany.

Best gelding, D. R. Jerauld, Niagara Falls, Dip. and $10. 2. G. Warren, Half Moon, $8. 3. Henry F. Hotchkiss, $6. 4. Daniel Waite, Darien, Youatt.

Commended.—Samuel Hoyt, Rochester, 1 six year old gelding; Geo. Hammell, Rome, 1 four year old stallion; John Oliver, Sterling, 1 six year old gelding; L. Post, Barry, 1 five year old gelding.

MARES.

Judges—Thomas C. Nye, Ch'n, Warren Fink, David B. Coy.

Best mare, Geo. Gates, Mohawk, Dip. and $10. 2. W. W. Wadsworth, Geneseo, $8. 3. Wm. C. W. Barker, Rochester, $6.

FOREIGN HORSES.

Judges.—Orlando Allen, Buffalo; John A. Cross, Kings; James M. Davis.

The committee on foreign horses having examined all the horses brought before them, respectfully submit the following report:

DRAUGHT HORSES.

The stallion called "Old Clyde," a dapple grey, 13 years old, 17½ hands high, weighing about 2,150 lbs., owned by Mrs. Jane Ward, of Markham, Canada West, is, in the opinion of the committee, the best horse for the purpose of draught which was brought before them, but having taken the highest premium offered by this society, in 1848, your committee recommend that a certificate and diploma be awarded to Mrs. Ward.

The stallion called "Canadian Clyde," a dapple grey, 6 years old, 17¼ hands high, weighing 1800 lbs., owned by Mr. Joseph Graham, of Canada West, is, in the opinion of your committee, the second best horse of this subdivision; Diploma and $10.

Stallion called "Clyde Britain," dapple grey, 6 years old, 17 hands high, weight about 1,700 lbs., owned by Mr. John Masson, of Cobourg, Canada West, is, in the opinion of the committee, the third best horse of this subdivision, and highly commended.

In making their selections the committee were governed by size, form, activity, the relative proportion of bone and muscle, apparent strength, as well as the manifest care which has been taken in breeding. Among the many excellent horses examined, (for most of them had merits of a high order,) we would mention particularly "Pride of the Mountain," a dapple grey, 7 years old, 16¾ hands high, weight about 1,500 lbs., owned by Hon. E. W. Stevenson, of St. Catherines, Canada West. "Wild Rover," 2 years old, iron grey, 16½ hands high, owned by Mr. Wm. Miller, Canada West. "Champion," a strawberry roan, 5 years old, 17 hands high, weight about 1,600 lbs., owned by Geo. P. Dixon, Esq., of Canada West.

Horses of all Work.

The stallion called "Perfection," a dark brown, 6 years old, 16 hands high, owned by Mr. Edward Henry Hanks, of Toronto, Canada West, is, in the opinion of your committee, the best horse "of all work," examined by them, and is entitled to the premium offered, a Diploma and $10.

"Heart of the Lion," a dark bay, 8 years old, owned by Mr. E. Tupper, Niagara Falls, Canada West, is, the second best horse in this sub-division, and is highly commended.

In making the above selections, the committee have been governed by size, form, speed, carriage, breeding, and the various qualifications necessary to constitute a perfect "horse of all work;" and while they do not present these horses as being perfect, in all respects, yet they approach nearer to that point, in their estimation, than any other named by them. It is but proper to remark that many of the horses of this sub-division, brought before the committee, have strong claims to popular favor, and among the more conspicuous is a four year old stallion "name not ascertained," owned by John Bothwick, Esq., Toronto, Canada West; also "Green Mountain Morgan," a dark chestnut, 10 years old, 15¼ hands high, owned by Mr. George Bryant, of Braintree, Vermont; "Morgan Hector," 3 years old, owned by Mr. F. A. Wier, Walpole, New Hampshire; "King Alfred," blood bay, 9 years old, 16 hands high, owned by Mr. Joseph Ashford, Drummondsville, Canada West.

Carriage Horses.

A pair of blood bays, geldings, 7 years old, 16 hands high, well matched and broke, good action, belonging to Mr. Augustus Sawyer, of Summit county, Ohio, and in the opinion of the committee, the best pair of "foreign matched horses." *Highly Commended.*

PEASE SC ALBANY.

UNIV OF MICH

A pair of black geldings, 5 years old, well matched and trained, fair size, light, easy travellers, belonging to John Braley, Canada West, and, in the opinion of the committee, the next best pair. *Commended.*

A pair of dapple greys, gelding and mare, good blood, fair size, prompt, easy travellers; Thomas Wardell, Hamilton, Canada West.

SHEEP.

Long Wooled.

Judges.—Sanford Howard, Ch'n, Albany; Geo. Miller, Markham, C. W.; O. P. Howe, Hamilton.

Best buck over 2 years, J. McDonald, Warren, $10. 2. Richard Peck, Lima, $8. 3. Samuel Hecock, Black Rock, $5.

Best buck under 2 years, Wm. Rathbone, Springfield, $10. 2. Jas. A. Jackson, Gilbertsville, $8. 3. Richard Gypson, Westmoreland, $5.

Best 5 ewes over 2 years, Wm. Rathbone, $10. 2. Thos. Hosebury, Cambria, $8. 3. Wm. Swails, Sodus, $5.

Best 5 ewes, under 2 years, William Rathbone, Springfield, $10. 2. J. C. Rathbone, $8. 3. Samuel Hecock, Black Rock, $5.

Best 5 buck lambs, William Rathbone, $8. 2. William Rathbone, Morrell's Amer. Shep. and $3.

Best 5 ewe lambs, William Rathbone, $8. 2. Thomas Hosebury, Cambria, Morrell's Amer. Shep. and $3.

Elias Barlow, Lagrange, for three lots of very good ewes, 3 in each lot, special premium of $8.

Middle Wooled.

Judges.—L. A. Morrell, Chairman; John P. Wheeler.

Best buck over 2 years, L. G. Morris and Noel J. Becar, $10. 2. Z. B. Wakeman, Herkimer, $8. 3. Samuel Baker, Edmeston, $5.

Best buck under 2 years, J. M. Sherwood, Auburn, $10. 2. Z. B. Wakeman, Herkimer, $8. 3. C. Parsons, Riga, $5.

Best 5 ewes over 2 years, L. G. Morris and Noel J. Becar, $10. 2. J. M. Sherwood, Auburn, $8. 3. Z. B. Wakeman, Herkimer, $5.

Best 5 ewes, under 2 years, Ambrose Stevens, New-York, $10. 2. Z. B. Wakeman, Herkimer, $8. 3. Charles B. Meek, Canandaigua, $5.

Best 5 buck lambs, Ambrose Stevens, New-York, $8. 2. L. G. Morris and Noel J. Becar, Morrell's American Shep. and $3.

Best 5 ewe lambs, L. G. Morris and Noel J. Becar, $8. 2. Z. B. Wakeman, Herkimer, Morrell's American Shepherd and $3.

Merinos.

Judges.—J. W. Ball, Chairman, Schuyler's Lake; J. L. Eastman, Lodi; David Collin, Fayetteville.

Second best buck, over 2 years, David Hillman, Avon, $8. 3. O. Smith, $5.

Best buck under 2 years, W. H. Cox, Stamford, $10. 2. N. M. Dart, Harpersfield, $8. General R. Harmon, Wheatland, $5.

To Reed Burrett, for his imported French Merino buck, a special premium of $10.

Best 5 ewes over 2 years, David Hall, Gaines, $10. 3. David Hillman, Avon, $5.

Best 5 ewes under 2 years, N. M. Dart, Harpersfield, $10.

Best 5 buck lambs, W. A. Cook, Lima, $8. 2. General R. Harmon, Wheatland, Morrell's American Shepherd and $3.

Best 5 ewe lambs, W. A. Cook, Lima, $8. 2. J. W. Hyde, Darien, Morrell's American Shepherd and $3.

Best samples of wool, 10 fleeces, W. D. Dickinson, Ontario county, Silver Medal.

Commended.—W. H. Cox, for his very fine ewes, which have previously taken a premium.

The Judges, on this class of sheep, would congratulate the Society upon the large number of valuable sheep, on exhibition. A very considerable portion were descendants from the Blakeslee and Atwood flocks, which were very superior sheep, and do great credit to the original breeders. While the fleece of the former is of very superior quality, it is believed that the sheep are smaller in size than is desirable. The latter, while the fleece is not as fine, yet the size of the sheep is such as to render them a very desirable breed for the wool grower.

The late importation of the French Merino finds favor with many, and it is thought, by some, to be superior to all others. They certainly have the appearance of being the sheep wanted to give character to our flocks, and a full trial is necessary, to determine whether the cross from these with our Merinos, will accomplish what is desired. It is a matter of regret, that some of the best sheep upon the ground were precluded from a premium in consequence of being exhibited with their fleeces on, contrary to the regulations of the Society. All that is necessary, is, for a sample to be left on the sheep, so as to enable the Judges to determine the character of the wool; and it is hoped the requirements of the Society will be complied with hereafter.

In the awards which have been made, the animals selected are those which, in our judgment, are the best for the farmer or wool-grower to breed from. It is hoped that increased care will be given to our flocks, so that our breeds of Merino may become as celebrated as those of any other country, and, instead of importing them to improve ours, we may be prepared to furnish sheep for other countries for that purpose.

Saxons.

Judges.—T. C. Peters, Ch'n, Darien; J. H. Robertson, Rochester; W. H. Ellis.

Best buck over 2 years, Samuel H. Church, Vernon, $10; 2. A. H. McLean, Caledonia, $8. 3. John Bettridge, Riga, $5.

Best buck under 2 years, Samuel H. Church, Vernon, $10. 2. Chas. Colt, Geneseo, $8. 3. David J. Lee, Darien, $5.

Best 5 ewes over 2 years, S. H. Church $10 2. Charles Colt, $8. 3. A. A. Mc Lean, $5.

Best 5 ewes, under 2 years old, S. H. Church, Vernon, $10.

Best pen 5 buck lambs, S. H. Church, Vernon, $8.

Best pen 5 ewe lambs, S. H. Church, Vernon, $8.

Best sample of wool, not less than 10 fleeces, David J. Lee, Darien, Silver Medal.

The Committee on Saxon Sheep and their grades, report: That they regret the small number exhibited, as compared with other breeds. They are aware that the growers of fine wool have had many discouraging circumstances to contend with for a few years past. The low price of fine foreign cloths, has discouraged our own manufacturers from purchasing any large amount of fine wool, and prices have therefore been very low, as compared with other kinds of wool. The great rage for heavy fleeced sheep, which has become so very prevalent within a very few years, has turned the attention of breeders and wool growers from the Saxons to the Merinos, and fine wool has been sacrificed for heavy fleeces. These disadvantages, however, are believed to be more apparent than real. The ease with which this breed is kept, the amount of wool which is obtained for the food consumed, if properly compared with the products of heavy shearing sheep, would leave but a very small, if any difference in the profits to the farmer. But as long as the speculator or manufacturer will make no just discrimination, as between heavy gummy wool, or that which is clean and light, and will pay us as high a price for the former as the latter; fine and light wooled sheep will not command the price or be in demand, like coarser and heavier fleeced ones.

It is to be hoped that the blood will not be permitted to deteriorate or become extinct, for the day is not distant when this class of sheep will be in demand, and their wool will bring a high price. It would be a public calamity, if such blood as has been examined to-day by the committee, should be suffered to run out by the owners, as it would be difficult to supply its place in this country or Germany.

Of WOOL, there was but one entry for premiums, ten fleeces by Mr. D. J. Lee, of Darien, and being deserving of a premium, the committee have adjudged it entitled to the first.

CROSS BREED SHEEP.

Judges.—A. C. Hull, Ch'n, Angelica; N. M. Waldron; Hiram Taft.

Best buck over 2 years, D. S. Curtis, Canaan, $10.

Best buck under, 2 years Taylor Goodell, Alexander, $10. 2. W. D. Dickinson, Victor, $8.

Best 5 ewes over 2 years, W. D. Dickinson, Victor, $10.

Best 5 ewes, under 2 years, David J. Lee, Darien, $10. 2. W. D. Dickinson, Victor, $8.

Best 5 buck lambs, W. D. Dickinson, Victor, $8. 2. Taylor Goodell, Alexander, $3 and Morrell's Shep.

Best 5 ewe lambs, W. D. Dickinson, Victor, $8.

FOREIGN SHEEP, LONG AND MIDDLE WOOLED.

Judges—A. R. Dutton, Chairman, Meredith; Daniel S. Curtis, Canaan; Leman B. Hotchkiss, Phelps.

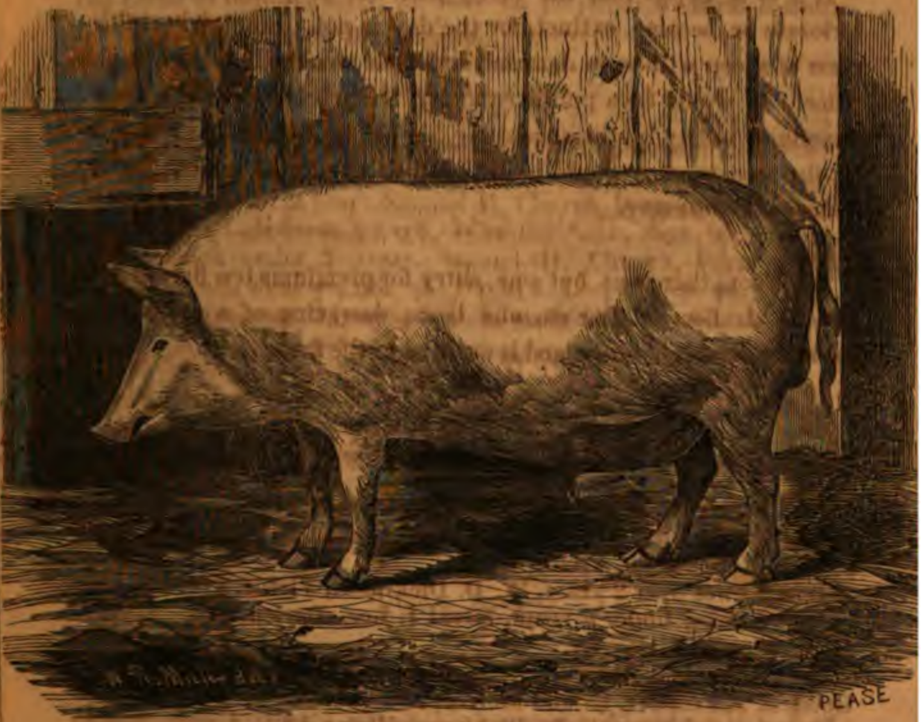
Long Wooled.—Best buck, R. C. Gapper, Thornhill C. W., $10.

Best 5 ewes, William Miller. Pickering, C. W., $10.

Middle Wooled.—Best buck, Joseph Pierce, Whitby, C. W., $10.

Best 5 ewes, Ralph Wade, Coburg, C. W., $10.

Special.—Joseph Pierce, a vol. of Trans. and $5 for a pen of middle wooled ewes; John Cade, Whitby, C. W., a vol. of Trans. and $5 for a pen of middle wooled ewes; William Miller, Pickering, C. W., a vol. of Trans. for 1 buck; Ralph Wade, Coburg, C. W., a vol. Trans. for 1 buck.



WESTMINSTER,

SUFFOLK BOAR PIG, the property of Lewis G. Morris, Mount Fordham—6 months old. Winner of the First Prize, of $8, at the Rochester Show, 1851.

MERINOS AND SAXONS.

Judges—Nathan Brown, Chairman, Oppenheim Center; Hiram Ashley, Allen's Hill.

Merinos.—Best buck, Jonathan S. Wilmarth, Addison, Vermont, $10.

Saxons.—Best buck, S. C. Scovil, Salisbury, Conn., $10.

SWINE.

Judges—Augustus Raynor, Chairman, Clarence; Benjamin Marr.

Best boar over two years old, Geo. Shaffer, Wheatland, $10. 2. Wm. H. Davies, Black Lake, $5.

Best boar 1 year old, L. Vanderwenter, Benton, $10. 2. Truman Bowen, Chili, $5.

Best boar, six months, and under one year, "Suffolk or Windsor Bray," L. G. Morris, Fordham, $8. 2. L. D. Hicock, Alexander, $3.

Best breeding sow over 2 years, Elisha Beebe, Henrietta, "Berkshire," and "Leicester," $10. 2. Truman Bowen, Chili, "Byfield," $5.

Best breeding sow 1 year old, Geo. Shaffer, Wheatland, "Leicester," $10. 2. Orrin Lathrop, Darien, "Leicester," $5.

Best sow, 6 months, and under 1 year, N. Haywood & Son, Brighton, "Leicester and Byfield," $8. 2. Matthias Garratt, Gates, "Leicester," $3.

Best lot of pigs, not less than 5, under 10 months, Samuel S. Wood, of Rochester, $10. 2. Elisha Beebe, Henrietta, $5.

POULTRY.

Judges—John R. Lee, Chairman, Buffalo; E. E. Platt, Albany.

Best lot of Dorkings, not less than 3, 1 cock and 2 hens, Lewis F. Allen, Black Rock, $3.

Best lot of Polands, F. W. Collins, East Bloomfield, $3.

Best lot of Malay or Chittegong fowls, A. A. Hudson, Syracuse, $3.

Best lot of Bantams, not less than 3, Charles Marble, Buffalo, $3.

Best lot of game, not less than 3, S. B. Colt, Irondequoit, $3.

Best lot of turkeys, not less than 3, S. B. Colt, Irondequoit, $3.

Best lot of Muscovy ducks, George Cummings, Rochester, $3.

Best lot of small ducks, not less than 3, John N. Smith, Attica, $3.

Best lot of Guinea hens, not less than 6, E. S. Treat, Rochester, $3.

Best pair large geese, Lewis F. Allen, Black Rock, $3.

Best lot poultry, F. W. Collins, East Bloomfield, $10.

Best exhibition of pigeons, Miss Mary Mines, Rochester, $3.

Best lot of wild turkeys, L. K. Haddock, Buffalo, $3.

Commended.—A. H. Ross, for lot of White Poland fowls.
D. P. Newell, Rochester, for best lot of Golden Poland fowls.
A. Stevenson, Eaton, Madison county, for Creole fowls.
J. Rapalje, Rochester, for fine lot of Bremen geese.
S. Hyde, Palmyra, fine lot of Chinese geese.
W. B. Williams, Rochester, for pair of Poland fowls.
D. P. Newell, for lot of White Dorking fowls.
F. W. Collins, for lot of Silver Poland fowls.
S. B. Colt, for lot of turkeys.
A. A. Hudson, for lot of Malay fowls.
R. L. Colt, " " "
B. B. Kirtland, " " "
S. Hyde, " " "
Thomas Hart, " " "
James Vick, " " "
R. S. Stevens, " " "
F. Ballard, " " "
L. K. Haddock, for lot of Spanish fowls,
C. Howland, for lot of Pair Swans.
Hugh Collins, for lot of Pigeons.
S. B. Colt, for lot of Java fowls.
B. W. Fassett, for lot of Silken fowls.
Mrs. E. Tyler, for lot of Spotted Dorkings.

Statement of the Poultry exhibited by F. W. Collins, of East Bloomfield, at State Fair, September, 1851.

The fowls exhibited were Shanghaes, Cochin China, Dorkings, Silkey fowls, Black Poland, Silver Poland, or Spangled Hamburghs and chicks from same; pair ducks, pair Bremen geese, pair Poland geese, pair Wild turkeys.

Stock of fowls last spring consisted of 50 hens and 7 cocks. The produce of which, in February, 356 eggs; March, 385; April, 1,096; May, 1,213; June, 1,033. The precise number after that time was not ascertained. In five months, the eggs realized, at 12½ cents per dozen, $47.07.

Shanghaes.—Wintered one cock and three pullets. One pullet commenced laying when between six and seven months old, and laid 108 eggs without interruption; she then raised a brood of chicks. The other two, after laying about 30 eggs each, manifested a disposition to set, and ceased laying for a few days. They produced about 90 eggs each. These were of Forbes' importation, and have proved hardy, healthy and quiet fowls. The pullets weighed at 6 months, 6½ lbs.; the cock 8½ lbs.

Cochin China.—These are large and lofty birds, and I consider them of the same family with the Shanghaes, but not so heavily feathered, consequently not so hardy. *Dorkings*, are of good size and shape, passably good layers, but lack that solid and compact appearance that is seen in most other breeds. I prefer several other breeds to these. *Black Polands*, are justly celebrated for laying, and are well worth keeping for eggs and ornament, do not set, till well matured; occasionally an albino appears among their chicks, pure white, with a very large top-knot. *Silver Poland*, or *Spangled Hamburghs*, are of all the fowls I have met with, the most ornamental and useful. They exceed all I have known for eggs; are not large, but very plump, weigh from 3 to 4½ lbs.; excellent for table use. Their color is white, with a round or crescent-shaped black spot on every feather, from the top-knot to the toes. The half-breeds prove good layers. I have the Creole or Bolton Grey Ostrich fowls, Malays, and colored Bantams, Peafowls and Doves.

I have expended nothing for hen house or poultry yard, as I had plenty of vacant buildings and sheds for my fowls. I fed 8 bushels corn at 50 cts. per bushel, and 10 bushels mill feed at 10 cents per bush.—$5. The offals of the kitchen, sour milk, loppered milk, whey mixed with shorts, and sometimes the offals of a slaughter house, were placed where the fowls had access to it. I consider milk a good substitute for meat, to produce eggs, and conducive to the health of the chicks. My fowls usually have their liberty to range over the farm at will, except those shut up for breeding, eggs, &c., and get most of their living abroad after spring opens, on grass, insects, seeds, &c.

Of ducks, I have 6 varieties. They are very profitable, when there is living water easy of access, both for eggs and feathers, Their eggs are worth more than those of common hens, and their feathers quite as good as geese feathers. They produce about 40 eggs each.

The large *White Bremen Goose*, yields a large amount of good feathers and down, is very quiet, and sometimes will dress, when fat, 20 lbs. The *Brown Poland Goose* has a black bill, a stately appearance, is heavily feathered, and lays many eggs. My geese live almost exclusively on grass in the summer, and hay with a little grain in winter. I consider the nett proceeds above one dollar each per annum.

My *Wild Turkeys* I procured in Ohio, some years since, of Mr. Jackson, in Cuyahoga county, who had domesticated them by hatching the eggs of wild birds under tame fowls; they are larger than those that have been domesticated for many generations. Five or six of those I brought from Ohio, are now in this vicinity; their live weight is from 25 to 30 pounds. The Turkey is very useful in this part of the State, especially when grasshoppers abound. I consider that they earn more than the cost of raising, by destroying grasshoppers. I one year raised 100, which brought me $80, which I considered all profit.

DR.

57 fowls, valued at 50c.,	$28 50
8 bushels of corn 50c.,	4 00
10 bushels of mill feed, 10c.,	1 00
Milk, offal, &c.,	5 00
Lot of screenings,	1 00
	$39 50

CR.

4,683 eggs, produced in 5 months, at 1c.,	$46 83
Eggs produced, but not counted, from 1st July to middle of September, believed to be worth,	10 00
Fowls sold,	36 00
150 fowls now on hand, valued at 50c.,	75 00
	$167 83
Deduct,	39 50
	$128 33

The above statement was verified, as required by the rules of the Society, and shows a very gratifying result and fair remuneration to Mr. Collins.

PLOWING MATCH

Judges.—Joseph Watson, Chairman, Galen; H. T. E. Foster, Seneco; John Smealie, Galway; M. H. Lawrence, Penn Yan; Wm. Logan, Broadalbin.

The committee would respectfully report that fifteen teams entered and took their stations at the appointed time. The work was, in general, well performed, although the larger number of plows cut a wider furrow slice than was prescribed by the rules of the society. After careful examination, the committee have ajudged the premiums as follows:

1. Alexander Rumsey, Ogden, Monroe county, Curtis plow; William Middleton, plowman, $10. 2. J. F. Plato, Batavia; Curtis plow; A. H. Plato, plowman, $8. 3. D. B. Westfall, Lyons, Wayne county, Wisconsin plow; D. B. Westfall, plowman, $5. 4. J. F. Plato, Batavia, Curtis plow; J. F. Plato, plowman, Trans.

Of boys under 18 years of age, but one entry was made. The work was well performed, G. H. Goodhue, Wheatland, plowman; and complied very closely with the rules of the society. Your committee deem it worthy of first premium. $10.

Your committee would not conclude their report without making mention of Land No. 10. The plow was a Michigan subsoil plow, and performed admirably, but in the opinion of the committee, this plow should not be brought into competition with other plows of usual form, as it is of a medium class between subsoil and ordinary plows. They would recommend a discretionary premium to be given to the plowman Charles W. Eells, Westmoreland, Oneida county, $5.

The committee would respectfully submit that, hereafter, all competitors should come strictly within the requirements of the Society, as to width and depth, or not be entitled to premiums. It is also suggested whether it is practicable to require a furrow plowed with our common plows with a coulter, to be only ten inches in width by seven in depth. The propriety of making a condition upon which premiums are to be given, and then bestow them without insisting upon the performance of it, may be justly considered doubtful.

FARM IMPLEMENTS, No. 1.

Judges.—Jonathan Edgcomb, Ch'n, Albion.

Best farm wagon, T. S. Eastman, Deerfield, $5.

Best harrow, Rapalje & Co. Rochester, $3.

Best corn cultivator, made entirely of Iron, Eddy & Co., Union Village, $3.

Best fanning mill, Grant's patent; Rapalje & Co. Rochester, $5.

Best corn stalk cutter, Densmore's Patent, Brown & Mills, Mt. Morris, $5.

Best straw cutter, Ruggles, Nourse, Mason & Co., makers, Rapalje & Co., Rochester, $3.

Best corn and cob crusher, by horse power, C. B. Tuttle, Rochester, $5.

Best clover machine, T. D. Burrall, Geneva, $5.

Best ox-cart, T. S. Eastman, Deerfield, $3.

Best horse-rake, Jared Clark, Unadilla Works, Otsego, $2.

Best ox-yoke, J. P. Fogg & Bro., Rochester, $2.

Best roller for general use, Rapalje & Co., Rochester, $5.

Best clod crusher and roller combined, John Walker, Chili, $5.

Mr. Jessup, of Lyons, for an improved hay and stalk cutter, Trans.

Z. W. Smith, Honeoye Falls, for Swift's patent improved horse rake, Trans.

Commended.—Waters & Osborne, for Hovey's patent straw cutter with spiral knives.

Eddy & Co. Union Village, for 5 plows and 1 side hill plow.

Brown & Morris, Mt. Morris, for 6 iron beam plows and 1 gang plow.

Wheeler's stalk cutter, horse power.

A. & L. D. Greene, Cortlandville, for Michigan sub-soil plow.

R. Van Brocklin, Middleport, for center draft plow.

Childs' patent grain separator, Diploma and Trans.

Wright's improved gang plow with attachment.

Starbuck & Co.'s plows.

Bamborough's patent grain separator, Diploma.

Hiram Curtis, Albion, 1 center draft plow.

The Judges on Farm Implements No. 1, have the satisfaction to report, that they have labored with untiring industry in the performance of the duty assigned them; having a great variety of articles presented to them for inspection, consisting of Plows, Gang Plows, Side-hill Plows, a variety of Corn Cultivators, Horse Rakes, Fanning Mills, a large assortment of Harrows, all sorts and sizes of Straw and Corn-stalk Cutters, Clod crushers and Rollers for general use, Ox-cart and farm Wagons worthy the commendation of every scientific tiller of the soil, and the uniform skill displayed in manufacturing the various aticles, rendered it difficult in some instances for your committee to discriminate with that entire satisfaction they would have been happy to have enjoyed; hence, we have to say to this noble and generous hearted band of brothers, who have assembled on this occasion, to promote the best interest of Agricultural science in the State, that whatever error we may have committed in our decision in awarding premiums, you will attribute it more to an error of the head than of the heart.

Conceding then, as we most cheerfully do, to the interest, honor, and praiseworthy exertions of the inventors, makers and venders of the various farm implements presented on this occasion, to swell the catalogue of fame of this State Society, (assembled in this rich and flourishing valley, destined to be the garden of the North, in Agriculture, Literature, Science and the Arts,) we commend them to your most favorable consideration, especially all tillers of the soil, who shall practically hereafter apply them to their intended use, we are happy to be able to say in our opinion, that at no former State Fair, since the organization of this Society, has there been so great a quantity of superior Agricultural Implements presented as at this meeting, adapted to all the various uses of husbandry from the field to the garden, consisting of between three and four hundred plows and other articles in proportion.

From the time that Cincinnatus commenced cultivating the earth with a crooked limb of a tree for a plow, down to the present time, but more especially since the commencement of the present century, almost unlimited progress has been made in perfecting implements for farmers' use; and so nice is the competition between inventors and manufacturers, that in our opinion, it is difficult to determine which is entitled to a preference, only by their direct application for the use for which they were designed, and that under the inspection of practical and competent judges.

The plow is the leading article in cultivating the earth, all other implements follow in train in their respective order. The plow virtually sustains the commerce of the world; and manufactures are inseparably connected with the best interests of the State and nation; hence this committee feel to say that agriculture, commerce and domestic manufactures virtually are the great pillars of our Republic, and unwise, indeed, would that man be who would presume to separate them.

We deem brevity in our report to be indispensable on this occasion, and have only to say in behalf of the Institution of our State for the promotion of agricultural science, that that man who by his practical knowledge is entitled to the name of an enlightened and intelligent farmer, receives the highest honors that can be conferred on an American citizen.

FARM IMPLEMENTS, NO. 2.

Judges—Stephen D. Freer, Chairman, Cortlandville; James Wm. McComb, Angelica; Nathan S. Rogers, Lockport.

Best wagon harness, G. S. Jennings, $2.
Best axes, D. R. Barton, Rochester, $2. 2. L. & J. White, Buffalo, small Silver Medal.
Best grass scythe, D. J. Millard, Sauquoit, Oneida county, $2.
Best grain scythe, North Wayne Company, Rapalje & Co., $2.
Hay knife, D. J. Millard, Trans.
Bramble scythe, D. J. Millard, Dip.
Bush hook, L. & J. White, Trans.
Scythes attached to snaths, Draper & Clark, Dip.
Best grain cradle, Daniel Deusler, $2.
Grain cradle by boy, 12 years old, O. Swift, small Silver Medal.
Best lever cheese press, F. S. Clench, Trans.
Best churn, N. B. Clark, $2.
Best hay forks, D. J. Millard, $2.
Best straw forks, W. Brand & Co , $2.
Best manure forks, D. R. Barton, $2.
Best hand rakes, C. F. Crossman, $2.
Best hay rack, Rapalje & Co , $2.
Best dozen twine brooms, C. F. Crossman, $3.
Best double carriage harness, E. B. Slasson, Albany, $2.
Best single harness, L. J. Lloyd, Albany, Dip.
Best washing machine, Joseph Hall, Trans.
Best hoes, R. & E. Clarke & Co., Dip.
Axe helves and scythe snath, Daniel Deusler, Trans.
Weight power churn, W. G. Simpson, Dip.

FARM IMPLEMENTS, No. 3. A.

Judges.—W. A. Langworthy, Chairman, Rochester: B. Hoard, Watertown; John P. Smith, Lockport.

Best horse power for general purposes, on the sweep or lever principle, H. E. Smith, Fowlerville, $5 and Dip.

Best horse power on railroad or endless chain principle, Emery & Co., Albany, $5 and Dip.

Best iron horse power, H. E. Smith Fowlerville, Livingston county, $5 and Dip.

Best thrasher, to be used with horse or steam power, Eddy & Co., Greenwich, Washington county, $5 and Dip.

The judges found it extremely difficult to award preferences on this class, from the fact that great perfection has been attained in the several varieties of Implements presented.

Among the sweep horse powers, Pitt's manufactured by A. Gordon & Co., Rochester, have a wide circulation and are deserving of much credit. The one exhibited was not put into operation, but we believe it to be a very efficient power. Woodbury's sweep power was operated very satisfactorily, and is decidedly a good and cheap power. Eddy & Co., Greenwich, Washington county, exhibited a power the wheel of which was 20 feet in diameter. Horses draw inside of the rim gearing and application of power and motion. This power possesses the advantage of a direct application of motion, without the intervention of gearing, journals and consequent friction, and has ever been considered the cheapest, strongest and most economical use of power. The power of H. E. Smith, Fowlersville, Livingston county, as a sweep or lever power, in strength, compactness and ease of motion, is superior, for general purposes, to any on the ground.

Among the railroad or endless chain powers, the competition was very spirited. Gillman & Brother, Danville, N. Y., are entitled to special commendation for their improvement in the grooved rail and rounded periphery of the truck wheels which confines the chain and flooring in their proper places, without any friction on the ends. They also claim an improvement in substituting a wrought iron chain in place of the usual cast chain. They have made at least one important improvement, in forming a double flooring, so that when the outside, on which the horse travels, is worn out, it can be replaced at a trifling expense without disturbing or disarranging the chain in its connection.

The contest was most spirited between Wheeler and Emery, two enterprising manufacturers from the city of Albany. Owing to the similarity of their machines they were required to give a test by thrashing a hundred bundles of wheat, and, notwithstanding Wheeler beat Emery by three minutes, we are of the opinion that as a whole, the railway horse power of Emery & Co. is entitled to the premium.

FARM IMPLEMENTS, No. 3. B.

Judges.—Enoch Marks, Ch'n, Fairmount; John R. Smith, D. L. Packard.

Best Grain Drill, with apparatus for depositing manure, Pierpont Seymour, East Bloomfield, Diploma.

Best wheat cultivator—"Rogers' wheel cultivator," Chappell, Whitesides & Barrett, Brockport, Diploma.

Best broadcast sower, Pierpont Seymour, East Bloomfield, Dip.

Mr. Seymour also presented a garden drill, constructed like his grain drill, which will doubtless prove a valuable machine for those who enter largely into the cultivation of root crops or garden vegetables.

The judges are of opinion that Messrs. Rapalje & Co., of Rochester are entitled to the premium of $20 and Diploma, for best and most numerous collection of agricultural implements.

And also for the best and most numerous collection of agricultural implements manufactured in the State by or under their supervision, $20 and Diploma.

MACHINERY AND IMPLEMENTS, No. 4.

Judges.—Ela Merriam, Ch'n, Lowville; C. C. Dennis, Auburn; David Jones.

Best scraper, for leveling roads, Elias De Garmo, patented by N. Potter, East Hamburg, $3.

Planing machine, Daniel's patent, H. E. Smith, Fowlerville, $5.

Tenoning machine for cabinet work, H. E. Smith, $3.

Steam engine on wheels, for farm use, 1st premium, Hoard & Bradford, Watertown, Medal and $25. 2d premium, Chas. Ross, Rochester, $20.

Conical Burr stone grist mill, Charles Ross, Rochester, Diploma.

Cast-iron cultivator, new invention, Silver Medal, D. Hinkston, Clarkson, (made by Chappel, Whitesides & Barrett.)

Ketchum's mowing machine, W. F. Ketchum, Buffalo, Certificate.

Portable cider mill press, A. & S. D. Freer, Cortlandville, $3.

Gang of plows, I. D. Smith, Shelby, Orleans co., commended.

Burr stone flouring mill, A. S. Sterling & Co., Buffalo, S. Medal.

Improved horse hoe cultivator and shovel plow combined, Hiram Wright, Morganville, Genesee co., $3.

Steam drier for grain, flour, meal and lumber, H. G. Bulkley, Kalamazoo, Michigan, Dip. and Silver Medal.

Machine for breaking and cleaning flax and hemp, S. A. Clements, Springfield, Massachusetts, Dip. and Silver Medal.

An upright steam boiler and engine, with flues crosswise, was exhibited, a compact efficient engine, but not in the opinion of the judges, an economical plan for boilers.

Patent governor valves for steam engines. This is a well made and essential article for steam engines, J. Judson, Rochester, Silver Med.

D. B. Rogers, Clarkson, patent road scraper, with revolving bottom and edge. Trans.

Enos Boughton, East Bloomfield, thistle digger and cultivator, a simple and effective implement, Silver Medal.

Rapalje & Co., Wheeler's combined thrasher and cleaner, a new invention and good article, $3.

Rapalje & Co., Segner & Shipton's patent seed drill, $3.

Samuel Davison, Greece, single plow seed sower and coverer, and gang plow seed sower and coverer, Trans.

REAPING MACHINES.

These machines are very important to the farmer, but the judges have been unable to decide fully on the merits of any one machine over another, having no facilities for testing the practicability of the machines.

Mr. C. Densmore has an improvement over many others, in an iron tooth rake passing the grain off at one side by the power of the machine.

Mr. A. Palmer has also a self-operating rake on his machine, which is very ingenious and simple.

Mr. T. R. Hussey's machine is got up in better style and material than any other on exhibition.

McCormick's reaper was presented for exhibition, merely. This machine was awarded the GREAT MEDAL, at the exhibition in London.

New-York reaper, Seymour & Morgan. A convertible reaper, T. D. Burrall.

The Executive Committee decided, on the report of judges, that no premium could be awarded to the reapers until a trial was had, to enable the judges to decide as to the qualities of the different machines in operation.

Exhibited by RAPALJE & Co., Wheeler's sheet iron seive, for fan mills, Trans.

Two Curtis plows, strong and well made, and one with graduating racket, regulating the set of the beam—a useful article.

Plows by Ruggles, Nourse, Mason & Co., composing a series, and suitable for every variety of work, of good materials and workmanship.

C. Curtis' gang plows and Dayton's gang plows, well made and useful implements, Trans.

Expanding plow cultivator. Bartlett's double plow, an ingenious implement. Farnham's double-lift and force pump. Portable Grist mill.

The judges desire to call particular attention to the machine for breaking and cleaning flax and hemp, by S. A. Clemens, Springfield, Massachusetts. The machine is a very ingenious one, simple in its construction, and all that can be desired for the purposes intended.

DAIRY PRODUCTS.

BUTTER.

Judges.—Ebenezer Miner, Chairman, Canton; Cyprian Powell, St. Lawrence, Wm. Sherman.

Best lot, quality as well as quantity considered, made from five cows in 30 consecutive days, 25 lbs. of the butter exhibited, Stepto Woodruff, Almond, Allegany county, $25.

Best 25 lbs. butter made in June, G. C. Howard, Ogden, $10. 2. F. Bishop, Geneseo, $5. 3. L. L. French, Warren, Herkimer, Trans.

Best 50 lbs. made at any time, Amos Goulding, Le Ray, Jefferson county, $15. 2. Wm. Shepard, Irondequoit, $10. 3. Marcus Bickford, Victor, $5. 4. G. W. Goodhue, Wheatland, Trans.

Girls under 21 *years of age.*—Best lot of butter, not less than 10 pounds, made at any time, Emma Van Vorhees, Mendon, Silver Milk Cup. 2. Lois Wells, Wheatland, Monroe county, Pair Butter Knives. 3. Sarah Brigham, Ogden, Set Tea Spoons.

BUTTER MADE FROM FIVE COWS IN THIRTY CONSECUTIVE DAYS.

Stepto Woodruff, Almond, Allegany county—Method of making.— My farm contains three hundred acres mostly in grass, but a small portion has ever been stirred by the plow; I think it much better for hay and pasture. I sow more or less plaster yearly; I think it a benefit to our pasture, it brings in white clover which is best for milch cows. My cows are of native breed, except two, which are half blood Durham. I use nothing but hay and grass; have owned my cows over two years. I drew the milk from five cows for thirty days in succession, commencing the 5th day of July, with the following result: made 179 lbs. butter. On the 12th day of July I drew the milk from the same cows and it measured 89 quarts and weighed 179 lbs.; three of the above cows are native, two half blood Durham. Milk this season 28 cows; milk in the stable; strain the milk in tin pails, set it in the cellar in warm weather; careful to churn as soon as the milk changes; use a horse power for driving our churns; use barrel churns, dash up and down; churn all the milk, and churn from one hour to one and a half. We use more or less cold water in warm weather to thin the milk and make the butter come hard; wash twice and sometimes three times in very warm weather, then salt to our taste; spread it thin in the trays so as to give it color; work with a ladle, always careful to work very light so as not to spoil the grain of the butter; work twice and pack in firkins, soon as firkin is filled, lay a cloth over, then a layer of salt, then cover with strong brine. Use Liverpool blown salt, Ashton brand. For the two seasons past milked forty cows. Butter sold in New-York market, in 1849, for 20 cts., and in 1850 for 19 cts. per pound.

Statement verified by affidavits, as required by rules of the Society.

CHEESE.

Mr. E. C. Adams, from the committee on cheese, reports:

That early in the season, it occurred to him that it would be a matter of general interest, and especially to the producers of Cheese, to exhibit the "rise and progress," in the United States, of the commerce in cheese, and also the relative amount of that commerce in different localities, as furnished by a statement of the imports and exports at the leading ports of entry on the seaboard.

With this view, a circular was prepared, and addressed to the collectors upon the coast. The circular made inquiries as to when the first imports and the first exports were made? How much had been imported and how much exported? How much exported to Mexico? How much to California? And how much to the Southern States?

To this circular, no answers of any value were received, except from Philadelphia and Boston. Hon. Mr. Greeley, collector of Boston, and Hon. Mr. Lewis of Philadelphia, gave prompt answers, and to the best of their ability, to the second copy of the circular addressed them, for which thanks are tendered; and also to D. B. Hasbrouck, Esq., of the customs of New-York, for procuring from the Treasury Department, the valuable statement herein embodied; and likewise to James McClery, Esq., of that Department for promptly furnishing the table.

If similar answers had been received from all the collectors addressed, a full comparative exhibit could have been made of the extent of all the markets for this article on the coast. And if accurate accounts were kept of the coastwise commerce in domestic products, a statement of the extent of this trade with the Southern States, could also have been furnished. The most that can now be done, with the facts at command, is to give the amount imported and exported from 1840 to 1850, inclusive, for the whole Union, and also a similar statement for Philadelphia and Boston.

After deducting the imports and exports, at Boston and Philadelphia, from the aggregate for the Union, the proportion of the balance belonging to the port of New-York, can be inferred.

A copy of the circular was also addressed to the President of the United States, with a request that he would send it to the Patent Office, with a request that such information on the subject generally as they could furnish, should be forwarded. As no answer has been received, the matter must have been the subject of a mistake, or they had nothing to communicate. If an answer should come, and also one from the Department of the Interior, the information they contain, will be added to this Report.

The first exports were in 1789, but were very inconsiderable; and were not of an extent to command even the attention of Congress, till 1820; and even from that period till 1840, the extent of this commerce abroad, was comparatively trifling.

It will be seen by the subjoined statement from the Treasury Department, that even as late as 1840, the export of cheese was only 723,217 pounds. The progress in this branch of Agricultural industry, from that time forward, is truly astonishing. The writer of this, well recollects the eagerness with which Boston cheese speculators, from 1820 to 1825, traversed the hills of Massachusetts in search of the best dairies; and if one of four or five cows could be heard of within 20 miles, with a zeal known only to speculators, they would find the object of their search, a family council in the cheese room would be called, when, after a unanimous decision by the party of the second part, a bargain would be struck usually ranging in the neighborhood of 2½ to 3 cents for the skimmed, and about 2½ to 3 cents for that which was not skimmed so much. Such, so far, is a picture of things in Massachusetts, only 25 years ago, and at a time when the region where this report was written and where it is read, knew nothing in their localities of a dairy; the few cows, kept to furnish the indispensable supply of milk and scanty stock of butter, subsisting in the winter mainly by browsing. To pass from such a condition of things, to an export in 1849, of 17,433,682 pounds of cheese, an intervening period of only 25 or 30 years, seems like magic, and would make us pause in astonishment, had we not become used to looking just such facts in the face at every turn. Still, though without the time or opportunity for instituting a comparison, it is believed that there are few features in which our industry or commerce has taken such a stride. The export of 1849, exceeds that of 1840, by about 23 fold. And this it must be recollected is in a department of industry in which the art was well understood prior to 1840, though not so well as now, in which labor-saving machines have not worked their wonders, and in which the appetites and tastes of mankind have undergone no change. It can, probably, with truth be said, that the quality of cheese made for export since 1840, is better than that which was made prior to that date; and also, that much greater skill is now possessed and exercised as to the manner of preparing the article for market. So far, this increased export is attributable to the influence of increased knowledge in augmenting trade and wealth. This ought not, and will not be overlooked by sensible men engaged in any department of Agricultural labor.

The subjoined statements from the United States Treasury Department, exhibit, first, the amount of cheese imported from 1840 to 1850, inclusive, and the amount of that exported. Also, the amount of the domestic product exported:

	Exported Pounds.	Imported Pounds.
1840	201,026	56,282
1841	112,540	24,945
1842	77,124	5,035
1843	30,033	5,586
1844	56,985	384
1845	65,109	9,713
1846	57,436	2,087
1847	81,676	.....
1848	139,498	1,480
1849	250,466	13,799
1850	333,985	760

Cheese Exported.

1840	723,217
1841	1,748,471

1842	2,456,607
1843	3,440,144
1844	7,343,145
1845	7,941,187
1846	8,675,390
1847	15,637,600
1848	12,913,305
1849	17,433,682
1850	13,020,817

This table requires no comment, as the figures speak for themselves. The export of 1849, is twenty-three times that of 1840; and the extent to which the amount of export advances and recedes from year to year, will be noticed.

It is certainly safe to assume that this extraordinary increase in the export of this article, the condition of the country at both periods, being taken into account, is to quite an extent attributable to the improvement which has taken place in the quality of the article, and in the manner of fitting it for transportation, securing its improved appearance at market. If so, the fact cannot be without its influence on those engaged in this branch of industry, A variety of suggestions might here be made, and would be made, in reference to the further extension and improvement of this important manufacture, but that they will readily occur to those interested upon a perusal of the above table.

PORT OF PHILADELPHIA.

The following table is a statement of the imports and exports at the port of Philadelphia, from '40 to '50, inclusive:

	Imported Pounds.	Exported Pounds.
1840	4,540	52,926
1841	4,053	78,633
1842	2,251	133,858
1843	845	224,855
1844	1,002	254,516
1845	271	230,666

1846	297	164,562
1847	1,818	205,694
1848	5,044	252,249
1849	412	164,395
1850 (chiefly Dutch)	15,363	150,431
1851 (very inconsiderable)	——	——
Total lbs.,	35,891	1,912,785

Mr. Collector Lewis, accompanied this statement with the following explanatory letter:

"CUSTOM HOUSE, PHILADELPHIA,
"*Collector's Office, Sept.* 8, 1851.

"Sir—In reply to your circular, (in part,) received this morning, I hand you statements of the quantity of cheese imported and exported from this port annually from 1840 to 1850, both inclusive. To the first question I am unable to reply; but can say that prior to 1830 the amount was inconsiderable.

"It is not possible to form any estimate of the amount sent to any other ports of the United States, as our coasting clearances do not give the details with any kind of precision. "The amount shipped hence to Mexico and California, is not large. Our largest export of the article is to South America and the West Indies.

Very respectfully,
Your obedient servant,
WILLIAM D. LEWIS,
Collector."

"E. C. ADAMS, ESQ., *Syracuse, N. Y.*"

It is found impossible to ascertain the amount sent to the ports in the Southern States. If, however, as is believed by some, the fact be, that as much, or nearly as much cheese is sent to the southern as to foreign ports, it is not impossible that among the other good qualities of good cheese, it is, in fact, one of the strongest links of our glorious union; for what man, "ardent as a southern sun could make him," having been accustomed to the genuine Yankee article, as produced in New-York and Ohio, could consent, except in extremity, to exchange its fine, rich, delicious, mouth-watering and peculiar flavor, for that furnished either by the English or Dutch? Possibly some of our intelligent and patriotic housewives may herein find an incentive to an improvement in the quality and flavor of the article, more potent, even, than the improved price, and twice as powerful with them as a political speech; for proverbially, these whole-hearted caterers to southern palates, are, to a man, in favor of Union. It is, moreover, respectfully suggested, as pertinent to this connection, that those unconscionably abominable specimens of human ingenuity, known as "hard cheese," cannot, with entire safety, have the same destination. They should be sold to the Dutch, to be used by them, when out of round shot, against the hulks of their enemies. We have so decidedly "beat the Dutch" in the extent of manufacture, that, even with the risk of their being used for such an appropriate purpose, we could well afford, at reasonable rates, to make over to them, a certain article, after the similitude of cheese, and called by that name, still to he found, if not at State Fairs, on the shelves of some farmers at home; for, in view of the political relations of the Dutch towards us, and of the tenacity with which they cherish friendships as well as enmities, there is not much danger that they would ever be used against ourselves. We really hope none of our southern brethren will take advantage of these hints, with a view to our ultimate hurt; for, should the torch of fraternal discord once be lighted, and the deadly weapons which had been prepared by some of our people for their stomachs, be turned against our heads, we should be compelled to exclaim, with one of the earliest transgressors on record, "*Our punishment is greater than we can bear!*"

PORT OF BOSTON.

The following is a statement of the imports and exports of cheese, at Boston, from 1840 to 1850, inclusive:

	Imported. Pounds.	Exported. Pounds.
1840	21,933	62,949
1841	2,531	187,665
1842	2,297	107,113
1843	920	373,417
1844	1,435	438,219
1845	1,682	597,027
1846	258	225,021
1847	1,680	480,987
1848	14,399	267,913
1849	920	363,270
1850	9,296	207,769

The Collector of Boston accompanied the above statement with the following note:

"CUSTOM HOUSE, BOSTON,
"*September* 8, 1851.

"Sir—I have the honor to acknowledge the receipt of your circular, with your note of the 4th inst.

"The records of this office do not exhibit the facts necessary to enable me to answer all your inquiries. "Prior to the passage of the act of Congress, of 1820, chap. 11, the imports and exports were not rendered, as they have been subsequently to that date. Therefore, I cannot furnish replies beyond what is contained in the annexed statement, unless you would like the quantities from 1820 to 1840, which could be transcribed in a few days.

"Very Respectfully,
"Your obedient servant,
"P. GREELY, JR.
"*Collector*."

"E. C. ADAMS, *Syracuse, N. Y.*"

"P. S. The first export was in 1789–90, no record is kept of shipments to ports in the United States, including California; shipments to ports in Mexico are trifling."

PORT OF SAVANNAH.

The only letter received in answer to the circulars sent to the southern ports, is the following:

"CUSTOM HOUSE, SAVANNAH,
"*Collector's Office, June* 23, 1851.

"Sir—I have just received your circular, making inquiries about the dairy. The subject you refer to is one of interest, and has occupied my attention heretofore, mainly, however, with a view to find out the quality of butter and cheese prepared for this market, as there are no exports of those articles from this port. This is a market which consumes large quantities of butter and cheese, and exports cotton and rice, principally. When you get your report completed, if you have it printed, you will confer a favor if you will forward a copy to my address.

"I have the honor to be,
"Very respectfully,
"Your obedient servant,
"HERRIMAN ROBERTS,
"*Collector.*"

"E. C. ADAMS, Esq., *Syracuse, N. Y.*"

The suggestion is doubtless here appropriate, that more full and explicit knowledge of the manner in which these articles should be prepared for the southern market, might extend the trade and manufacture, on remunerating terms, and agreeable and satisfactory to both parties. For, however successfully, in the true spirit of enterprise, our southern brethren can compete with us of the north, in the manufacture of cotton fabrics, in the matter of cheese, we have about the same advantage of them—probably more—in the production of the raw material, that they have of us in the matter of cotton. So that however soon we may be forced to yield our present ascendancy over them in the manufacture of cotton, the cheese press will for some time remain among the insignia of the agricultural triumphs of the North. Our unequalled adaptation and our skill at one end, and their unappeasable appetites at the other, constituting, as already hinted, one of the bonds to hold us together under the old roof-tree.

How brief is the period since bread-stuffs, butter and cheese, were sent from New-York to Ohio, for the use of the people who had just settled in her wilds! And yet to-day, New-York and Ohio, are the two first Agricultural States in the Union.

The rapid improvement and extension of the railway system, particularly in the communications between the city of New-York and Ohio and the great west are to exert a most favorable influence upon this manufacture in Western New-York and the Western States. It brings competition within the reach of all; and competition compels excellence. The price of butter and cheese is affected by the condition of the packages in which they reach the market. Frequent transhipment, changes from one mode of conveyance to another, have the effect to place the outward appearance of these articles in a condition which knocks them down in the market, five, ten, or fifteen per cent., as the case may be; a reduction which, if not ruinous, shows how great the profit might be under more favorable circumstances of transit. Those who daily note the New-York Price Current, have observed that Ohio cheese is usually quoted at from one and a half to two cents below the New-York article, and butter from two to three cents below. Is there any reason for this, other than the one already assigned? Again, is there any reason why Onondaga or Monroe butter should not hold the same position in the New-York market, as that of Orange? None, whatever, which cannot be removed; and if it be a fact, that Orange county butter is the best, it is not because as good cannot be made in Onondaga, and Monroe and Genesee, but because equal facilities for market have not yet stimulated the competition necessary. The same is true of Ohio and of the whole west. The competition afforded by the numerous lines of railway, now completed or in process of construction, will at an early day, bring the productions of all these localities up to "high water mark;" in other words, the operation of the unerring law of self interest will bring them there, just as soon as that sleepless principle of human action has a chance to work.

Of the future, as regards the West, it is hardly worth while to speak. No man, who is capable of estimating the strength of the West, after it shall have advanced from infancy to manhood, would venture to place his anticipations on paper, unless he were willing to be written down an enthusiast or a dreamer. One result of its wonderful growth and development in the future should be here referred to: In order to maintain an ascendency in the market, we of New-York, cannot remain at a stand still as to the quality of the article we produce, nor in the condition in which it is presented for sale. For the same article will soon be delivered from Indianapolis, Dayton, Milwaukie, or Dubuque, at New-York, in as good condition as from Rochester, Penn Yan or Syracuse; and, for all practical purposes of a market, almost as quick!

The samples of cheese offered for our inspection, were, with few exceptions, of an extra quality, and those interested must bear in mind that when two articles are of nearly equal excellence, the task of discriminating is both delicate and difficult.

Your committee were unanimous in awarding the "County" premium, to the county of Jefferson, and would add, that Herkimer was hard to beat; their exhibition of cheese was almost faultless, one single cheese decided in favor of Jefferson.

Your committee have awarded on cheese one year old and over as follows:

1st premium, Guy Reed, Richmond, Ontario Co., $20. 2. E. F. Carter, Le Ray, Jefferson Co., $10. 3. C. W. Eells, Westmoreland, Oneida Co., $5. 4. Wm. P. Ottley, Phelps, Ontario Co., Trans.

Less than one year old.—1. Geo. Hammell, Rome, Oneida Co., $20. 2. Chas. Benjamin, Rushford, Allegany Co., $10. 3. Almon Benjamin, Centerville, Allegany Co., $5. 4. E. & H. Colvin, Hamburgh, Erie Co., Trans.

Best six dairies from any county, County of Jefferson, $30. Moses Eames, Rutland, Jefferson; Gardner Towne, Rutland; E. F. Carter, Le Ray; George Webb, Pamela; M. Bryant, Watertown; P. Hardy, Le Ray, Dairymen.

One remark and we close; there were two samples of cheese exhibited, that were, in our opinion, of too high a color, and but for the drug introduced into the body of the cheese, would have ranked much higher in the opinion of your committee; and we cannot close this report, without expressing our individual disapproval of the custom of introducing or using a drug in the article, which, to say the least, adds nothing to its taste or appearance.

SUGAR.

Judges.—E. M. Bradley, Ch'n, East Bloomfield; F. F. Wilson, Rochester.

Best 25 lbs. sugar, Benj. Gaus, jr., E. Bloomfield, Ontario, $10. 2. John A. Sherman, Rutland, Jefferson, $5. 3. O. S. Wiley, Ogden, $3. 4. J. C. Howes, Sweden, Trans.

Luman Shepherd, Avery Blodgett, commended.

Thayer Gaus, East Bloomfield, sample of maple molasses, commended.

HONEY.

Judges.—Charles G. Irish, Ch'n, Buffalo; Andrew E. Pardee, Rochester; James Lyon, Irondequoit.

Best 20 lbs. Edward & Platt, Brooklyn, $5. 2. Caroline Tyce, Webster, $3. 3. E. P. Carter, Le Ray, Jefferson co., $2.

R. H. Brown, Greece, Monroe co., for hive of bees, is awarded Transactions.

Curtis Coe, Springport, Cayuga County, for four cups of honey, is awarded Transactions.

GRAIN AND SEEDS.

Judges.—Isaac Parker, Ch'n, Potsdam; T. J. Folwell, Romulus.

Best sample winter wheat, not less than one barrel, Anthony Kentz, Greece, blue stem wheat, $5.

Thornby A. H. McLain, fine sample Troy wheat, but not sufficient quantity.

Best sample spring wheat, Truman Mattison, Penfield, club wheat, $5. 2. Charles W. Eells, Westmoreland, Oneida county, $3.

Best sample of rye, Daniel P. Bigelow, Barre Center; Multicole rye, $5. 2. E. Sherman, Crawford, Orange county, $3.

Best sample barley, O. Howland, Owego, two rowed variety, $5.

Best sample Indian corn, C. W. Eells, Westmoreland, $5. 2. James Cobb, Brighton, $3.

Best sample Buckwheat, Henry Wier, Pittstown, Rensselaer, $2. 2. William Baker, Lima, $2.

Second best sample timothy seed, E. Sherman, Crawford, Orange, $2.

Best sample of crops cultivated and raised on any one farm, tastefully arranged and exhibited on a cart, General Rawson Harmon, Wheatland, $10. 2. W. P. Otley, Phelps, $3.

L. L. French, Warren, Herkimer, fine sample peas, four varieties, Norton's Essay

O. Howland, Owasco, sample peas, Transactions.

Louis Chapin, Rochester, blue stem wheat, from Akron, O., Trans.

Charlwood & Cummins, No. 14, Tavistock Row, Covent Garden, London, per Ellwanger & Barry, 144 varieties of field and garden seeds, for museum of society, Silver Medal.

J. Hosford, Mt. Morris, samples of grain, Transactions

N. Hayward, Brighton, garden seeds, Transactions.

J. P. Fogg, Rochester, sample Chinese wheat, from Niagara county, Transactions.

L. Vilmorin, Paris, France, a fine collection of wheat and barley in the ear, finely arranged in glass case, for museum of society, Silver Medal.

A. H. Ernst, Cincinnati, beautiful specimens of an improved variety of English wheat, Diploma.

R. Peters, jr., bag of very superior wheat for distribution, Dip.

VEGETABLES.

Judges.—D. C. LeRoy, Chairman, Onondaga; James Flemming, Toronto; H. D. Dickinson, Lyons.

12 best stalks of celery, David Rudman, Irondequoit, $3.

6 best heads of cauliflowers, John Gray, Rochester, $3.

12 best white table turnips, John Donellan, Greece, $3.

12 best carrots, James Caudle, Greece, $3.

12 best beets, C. F. Crossman, Rochester, $3.

12 best parsneps, H. Mulholland, Brighton, $3.

12 best onions, John Donnellan, Greece, $3.

6 best heads of cabbage, John Gray, Rochester, $3.

12 best tomatoes, John Gray, Rochester, $3.

2 best purple egg plants, James Caudle, Greece, $3.

12 best sweet potatoes, R. S. Stevens, Attica, $3.

Best half peck Lima Beans, David Hamlin, Clay, $3.

Best bunch double parsley, Theodore Backus, Rochester, $3.

3 best squashes, James Buchan, Rochester, $3.

Largest pumpkin, John Gray, Rochester, $3.

12 best ears of seed corn, O. Howland, Owasco, $3.

Best half peck of table potatoes, James Buchan, Rochester, $3. 2. E. C. Bliss, Westfield, $2.

Best and greatest variety of vegetables owned by exhibitor, John Donnellan, Greece, $5. 2. C. F. Crossman, Rochester, $3.

Special Premiums.—Z. M. Saunders, Watervliet, carrots, Trans.

James Buchan, Rochester, cabbages, Transactions.

H. Mulholland, Brighton, half peck yellow Aberdeen turnips, Transactions.

The exhibitition, in this department, was highly creditable, and, in the opinion of many, superior to that of any previous fair. The committee beg leave to call the attention of farmers and gardners, to the following varieties of vegetables, not embraced in the list:

John Donnellan, Greece, exhibited the yellow Malta Turnip, a most valuable variety for table use. H. Mulholland, Brighton, presented half bushel of yellow Aberdeen Turnips, excellent for the table, and for field culture. The committee recommend a premium to him for the same of one vol. Transactions. James Caudle, Greece, exhibited fine specimens of the White Belgian Carrot. We recommend this variety for field culture, as growing larger, and producing a greater quantity on a given surface than any other variety. John Donnellan, had a fine show of the Tripoli Onion, the largest on exhibition. It is well worthy of trial; he also exhibited nine varieties of Squashes, very fine and of large size. Theodore Backus, Rochester, exhibited fine specimens of yellow skinned onions, raised near the corner of Troup and High streets, Rochester. There was submitted to the committee, a statement of the Ward Assessor, certifying that the produce of one-eight of an acre of this variety, was 145 bushels. Oliver Phelps, Canandaigua, exhibited 2 varieties of Turnip Cabbage, an article we would commend as worthy of more general cultivation. It is profitable for feeding cattle, and when young very fine for table use. The sample of sweet potatoes exhibited, was accompanied with a statement of cultivation and amount given.

Statement as to culture of Sweet Potatoes.

"I have raised Sweet Potatoes like these in my garden for the last twelve years successively, and never failed to have a fair crop. This has been a cold wet summer, and the crop is the lightest I have ever had; I have in a good season, taken up one hill, with a peck of potatoes on the vines, and generally much larger, and some four times as large as any now shown. The soil in which they are planted should be light and sandy, and plowed or spaded deep, and made very light and mixed with fine old manure. The hills should be high and raised at each time of hoeing, as the potatoes run perpendicularly and require great depth of soil. I have never been able to preserve the seed through the winter, always procuring it in New-York in the month of March. The small second growth ones are used for seed and should be planted in a hot bed, in order to have them of sufficient size, to transplant so soon as the weather is warm enough, and not injure them by frost. These potatoes require but little care, and I have no doubt but that any quantity might be raised in Western New-York, almost if not quite as easily as the common potatoe, with no danger whatever from the rot."

ATTICA, Sept. 16, 1851.

FLOUR—BREAD, CRACKERS, &C.

Judges—Geo. W. Tifft, Chairman, Buffalo; Wm. Fonda, Orleans; John F. Noye, Buffalo.

Best barrel flour, M. B. Seward, Shawmut Mills, Rochester, Small Siver Medal. 2. Lapham & Olney, Egypt, Trans.

Nine barrels flour, James P. Fogg, Rochester, a fine pastry flour.

Two barrels superior flour, Paddock & Munson, Chapinsville, very excellent in quality.

One do do, John Putnam, Greece, a good substantial flour.

One do do, J. Lathrop, excellent family flour.

One do do, D. Cope, Chili, excellent in quality.

One do do, E. Sornberger, Rochester, excellent in quality.

One do do, D. W. Lee, Geneva, superior family flour.

One do do, A. Ward, Albion, excellent in quality.

One do do, J. P. Brown, North Bloomfield, superior family flour.

Mrs. E. A. Bloss, Rochester, extra family bread and buiscuit, from C. J. Hills, superior flour, Diploma.

Bread and crackers, Jacob Howe, Rochester, very superior, Dip.

The judges have never examined so many samples of flour grading so near alike in quality, and it is, in their opinion, a strong proof of the great perfection attained in the manufacture of flour in this State. We can truly say that the Empire State stands far ahead in perfect milling.

Very soon after the Fair terminated at Rochester, the Hon. D. C. Le Roy, was taken suddenly ill, and his disease baffling the skill of his physician, soon terminated his life. His decease, so sudden and unexpected, cast a gloom over the neighborhood of his residence, where he was deservedly esteemed; and those who became acquainted with him during his services here as a member of the Legislature in 1851, can well appreciate the loss which the county he represented has sustained, as well as the public at large. He took a deep interest in the cause of Agriculture, and had his life been spared, would have been found among the most ardent and zealous promoters of the improvements which are in progress in our State.

In 1850, he delivered a very able address before the Onondaga County Agricultural Society, an extract from which, on the "Application of Science to Agriculture," will be found in the Transactions of 1850, page 266.

WOOLEN GOODS AND SILK, No. 1.

Judges—R. S. Doty, Chairman, Rome; Gen. John B. Lee, Albion; John S. Gay, Seneca.

Best sewing silk, E. M. Hartwell, Rochester, Diploma and $5.

Best pair woolen blankets, Mrs. Horace Clark, Skaneateles, $6. 2. Mrs. H. Walker, Union Square, $4. 3. David J. Lee, Darien, $2.

Best 10 yards flannel, Mrs. Sarah A. Chapin, Henrietta, $4. 2. N. Haven, jr., Watertown, $4. 3. H. Massy, jr., Watertown, $2.

Best 10 yards woolen cloth, Leander Campbell, Alden, Erie county, $10. 2. Mrs. B. R. Voorhees, Amsterdam, $8. 3. Mrs. James T. Van Namee, Pittstown, $3.

Best 10 yards woolen carpet, M. L. Hungerford, Watertown, $10. 2. Alonzo Haven, Erie co., $8. 3. Mrs. E. C. Bliss, Westfield, $3.

Best hearth rug, Mrs. Susan Cook, Sheffield, Mass., $5. 2. Eunice S. Tuttle, Henrietta, $4. 3. Mrs. Van Rensselaer Rowe, Rochester, $3. 4. Miss Matilda M. Bond, Rochester, $2.

Best rag carpet, 15 yards, Mrs. W. C. Burnett, Marshall, $5. 2. E. Bishop, Utica, $4. 3. B. F. Trimmer, Small Silver Medal.

Woolen yarn, Miss C. McKnight, Syracuse, Small Silver Medal.

DOMESTIC MANUFACTURES, No. 2.

Judges.—O. Jewell, Chairman, Cazenovia; H. B. Timothy, Ransomville; Benjamin Enos, De Ruyter.

Best double carpet coverlet, Mrs. L. D. Hickox, Alexander, $5. 2. Mrs. Eliza Maker, Lockport, $4. 3. Mrs. Luman Shepherd, Skaneateles, $3. 4. Mrs. Juliet Chamberlain, Penfield, $2. 5. Mrs. Sarah A. Chapin, Henrietta, $1.

Best 10 yards kersey, Mrs. Henry Weir, Pittstown, $5. 2. Mrs. Jas. T. Van Namee, Pittstown, $4. 3. David Hamlin, Clay, $2.

Best pair woolen knit stockings, Miss Harriet Holt, Leyden, $2. 2. Miss C. McKnight, Syracuse, $1.

Best pair woolen wove stockings, Miss Catharine McKnight, Syracuse, $2.

Best pair woolen fringe mittens, Mrs. Wm. Burns, Rochester, $2. Mrs. H. Clark, Skaneateles, $1.

Special Premiums.—Mrs. B. R. Voorhees, for a pair rose blankets, and a case of various articles, manufactured from raw materials, Silver Medal.

Miss Elizabeth Graves, Adams' Basin, for a pair of stockings, wool carded by hand, and yarn spun three threaded, "Downing's Fruits."

Mrs. Jane L. Clark, Clarkson, for 2 pair of stockings, "Thomas' Fruits."

Mrs. James T. Van Namee, for 15 yards mouslin de laines, manufactured in the family, a volume of Transactions.

Mrs. James T. Van Namee, for 15 yards linen diaper, spun by an orphan girl under 12 years of age, living in the family, Small Silver Medal.

Mrs. Wm. Pixley, Chili, for 1 pair ladies' woolen stockings, with skeins of yarn as sample accompanying the same, "Downing's Fruits."

James Bicknell, Westmoreland, for 1 carpet coverlet, small Silver Medal.

Mrs. Horace Clark, Skaneateles, for 5 pair woman's stockings, 5 pair of children's and 7 pair of men's, "Downing's Fruits."

Mrs. S. H. Church, Vernon, 1 pair of woolen stockings, 1 pair ladies' stockings, and 1 pair linen stockings, "Thomas' Fruits."

Mrs. F. C. Lawrence, Skaneateles, for four pair of gloves and 6 pair fringe mittens, "Downing's Fruits."

Miss Catharine McKnight, 1 pair silk stockings, small S. Medal.

DOMESTIC MANUFACTURES No. 3.

Judges—Augustus Sanford, Ch'n, Norwich; S. C. Scovill; E. J. Pratt.

Best 10 yards linen, Mrs. Horace Clark, Skaneateles, $8. 2. Mrs. Henry Weir, Pittstown, $6. 3. David Hamlin, Clay, $4.

Best 10 yards linen diaper, Miss Mary Tracey, New-Lebanon, $6. 2. Mrs. Amos Clark, Skaneateles, $4. 8. Mrs. Elijah Shepherd, Skaneateles, $2.

Best 15 yards tow cloth, Mrs. Henry Weir, Pittstown, $5. 2. David J. Lee, Darien, $2.

Best pair linen knit stockings, Mrs. E. Bishop, Attica, $2. 2. Mrs. S. Fuller, Westmoreland, $1.

Special Premiums.—Mrs. B. R. Voorhees, for 1 overcoat, made from the raw material, Diploma; 6 meal bags, Transactions; 1 cottage hat, collar and cuffs, Norton's Essay.

Caleb Gardener, Macedon, 1 sample linen floss, Transactions.

O. A. Hyde & Co. Rochester, for 3 shirts and 3 dressing gowns, Transactions.

Miss Mary Ann Shelton, Rochester, 7 pieces cotton net work, Diploma.

Mrs. Wm. Baker, Lima, for 1 pair curtains, Transactions.

Mrs. Luman Shepherd, Skaneateles, 6 pair fringed mittens, "Thomas' Fruits."

Mrs. Luman Shepherd, Skaneateles, 5 pair linen pillow cases, Transactions.

Mrs. A. P. Lunt, Rochester, 1 piece cotton flannel, Transactions.

Mr. E. G. Roberts, New-York, flax cotton, and goods made from same, Diploma and Silver Medal.

A. Anderson, Watertown, 2 boxes of cotton yarn, candle wick and batting, Diploma.

Mrs. A. Mabbett, Yates, 4 yards linen diaper, very fine, Trans.

Mrs. Juliet Chamberlain, Penfield, 2 table cloths and 3 linen sheets, Transactions.

Mrs. Juliet Chamberlain, 4 pillow cases and napkins, "Thomas' Fruits."

Mrs. Wm. Alling, Rochester, 1 pair linen sheets, Transactions.

Mrs. F. C. Lawrence, 20 yards table linen, Diploma.

No. 3.—FLAX COTTON.

The committee report, that, although there are many articles exhibited, that evince superior skill and workmanship, in their manufacture—still it is evident that the sound of the wheel and the loom are not heard in our dwellings as of yore; and that even the apparel of our farmers and their families are composed of purchased fabrics, instead of the "handy work" of their own wives and daughters.

There was an article exhibited, of which we desire to speak in a manner equal to its importance—though we are unable to do it. We allude to *Flax Cotton*. Various specimens of flax, in different stages, were exhibited. Flax cotton, yarn and cloth, of various degrees of fineness, made on cotton machinery, and broadcloth and satinett, composed of flax, cotton and wool, made on woolen machinery. The quality of these cloths was such as to inspire the utmost confidence in the successful substitution of flax cotton in many branches of manufactures. And if, as was stated to us by the gentlemanly exhibitor, it can be supplied equally as cheap as ordinary cotton, it must have a most important bearing upon the many interests associated with that important staple, both in this country and in Europe. Flax cotton was exhibited to us, dyed in various colors. It was also shown dyed in various colors in yarns, spun entirely from flax, or mixed with various proportions of cotton, and no difference of color, of the two substances, at all perceptible, thus showing that the flax so prepared is capable of taking the same dye as ordinary cotton; some samples of yarn prepared as silk, were also exhibited, and as illustrating the great command which the inventor has over the fibre, these are dyed in colors possessing all the glossiness and brilliancy of the most beautiful silk. Several pieces of cloth, formed entirely of flax cotton, bleached and dressed as ordinary cloth, were exhibited.

Time would not permit us to examine this novel article, in all its various stages, as minutely as we could have wished, but enough was elicited to convince the committee of the great importance of the discovery, and the effect it is designed to have on the commercial and manufacturing interests, not only of our own country but of the whole civilized world. We recommend this article to the highest honors of the society.

A more detailed account of Chevalier Claussen's process will be found in the report of Mr. Johnson, at the close of this volume.

MANUFACTURES OTHER THAN DOMESTIC.

Judges.—A. B. Conger, Ch'n, Haverstraw.

Best piece of mouselin de lanes, Manchester Print Works, N. H., Wilder, Gorton & Co., Rochester, agents, Diploma.

Best piece of blankets, Wilder, Gorton & Co., Rochester, Dip.

Best woolen shawls from American wool, James Roy & Co., Watervliet Woolen Mills, Diploma and Silver Medal.

NEEDLE, SHELL AND WAX WORK.

Judges.—Mrs. J. Gould, Ch'n, Rochester; Mrs. R. Hollister, Buffalo; Mrs. S. A. Goodwin, Auburn; Mrs. S. R. Fish, Penn Yan; Mrs. H. M. Burr, Medina; Miss. L. J. Whitney, Rochester; Mrs. John Williams, Rochester.

Best ornamental needle work, Mrs. G. J. Whitney, Rochester, $3.

Best Ottoman cover, Mrs. Elizabeth Gould, Rochester, $3.

Best table cover, Mrs. Hiram Steele, East Bloomfield, $3.

Best variety of worsted work, Miss Sarah M. Haywood, Brighton, $3.

Best fancy chair work with needle, Mrs. C. A. Burr, Roch., $3.

Best worked collar and handkerchief, Mrs. B. R. Voorhees, Amsterdam, $3.

Best woolen shawl, Mrs. Sarah E. Granger, Rochester, $3.

Best worked quilt, Mrs. H. A. Weed, Albany, $3.

Best silk bonnets, Mrs. Simmons, New-York, $3.

Best straw bonnets, Mrs. S. Fuller, Westmoreland, $3.

Best lamp stand mats, Miss Nancy Mathies, Rochester, $3. 2. Mrs. E. M. Eaton, Ogdensburgh, $2.

Best ornamental shell work, Mrs. Louis Chapin, Rochester, $3. 2. Mrs. Wm. Bradley, East Bloomfield, $2.

Best specimen of wax flowers, Mrs. Elenora T. Crocker, Utica, $3. 2. Mrs. Ellen Dorr, Scottsville, $2.

Embroidered ottoman cover, infant's blanket of silk, frame worsted work suspenders, Mrs. S. R. and Miss S. R. Vines, Utica, Norton's Prize Essay.

1 Table cover worsted work, Miss. V. Acer, Pittsford, Trans.

1 Table spread embroidered, Mrs. B. A. Skinner, Fairport, Norton's Essay. 2. Best fancy embroidered chair, Miss Mary E. Conklin, Rochester, $2

1 Mosaic chair, Mrs. J. C. Stone, Rochester, Downing's Fruits.

1 Embroidered chair and handkerchiefs, Mrs. G. W. Fisher, Rochester, Small Silver Medal.

1 Piece frame worsted work, Miss Mary E. Wells, Aurora, Small Silver Medal.

3 Embroidered handkerchiefs, Miss Kate Field, Rochester, Small Silver Medal.

1 Fire screen, Mrs. A. Elmendorf, Palmyra, Small Silver Medal.

1 Fire screen, Mrs. Ellen Dorr, Scottsville, Norton's Essay.

1 Lace straw bonnet, put together without thread, Mrs. J. E. Van Vleck, Elbridge, Small Silver Medal.

Vase shell flowers, Miss Mary E. Conklin, Roch., Norton's Essay.

9 Specimens of embroidery, Miss Anna M. Garfield, Troy, Dip.

Child's cloak, Mrs. D. W. Fellows, Troy, Small Silver Medal.

Red merino long shawl, Turkish pattern, Miss Frances C. Bullard, Rochester, Diploma.

8 Crochet bags and 1 do tidy, Mrs. G. J. Whitney, Rochester, Small Silver Medal.

2 Infant's hood, Mrs. S. G. Andrews, Rochester, Downing's Fruits.

4 Needle books, 1 embroidered hood, Miss Sherlock, (a mute,) Rochester Small Silver Medal.

Shawl Scarfs and vests embroidered with colors, Mrs. A. B. Hull, Angelica, Small Silver Medal.

Best embroidered handkerchief, Mrs. Lydia Powers, Rochester, Small Silver Medal.

Best worked collar, Mrs. F. W. Northrop, Lowville, Small Silver Medal.

2 Embroidered handkerchiefs, Miss Vashti Acer, Pittsford, Downing's Fruits.

3 Elegant stitched shirts, Mrs. L. E. Smith, Mechanicsville, $3.

1 Case thread lace, Mrs. Geer, Webster, $3.

2d best White quilt, Mrs. D. L. Hunn, $2. 2nd best Pieced colored quilt, Miss L. D. Whitney, Clarkson, $2.

1 White knit counterpane, Misses Julia A. and Jane E. Nash, Alexander, Genesee county, Silver Medal.

Silk quilt, mosaic pattern, Mrs. F. H. Ripley, Clarkson, Diploma.

FLOWERS

PROFESSIONAL AND AMATEUR LIST.

Judges.—Dr. Alexander Thompson, Chairman, Aurora; V. P. Douw, Greenbush; Miss M. C. Conkling, Auburn; Miss Mary Wells, Aurora; Mrs. Samuel L. Selden, Rochester; Mrs. Thomas Rochester, Rochester; Miss C. Adele Granger, Canandaigua.

Professional List.—Greatest variety and quantity of flowers, Ellwanger & Barry, Rochester $5. 2. C. J. Ryan, Rochester, $3.

Dahlias.—Greatest variety, C. J. Ryan, Rochester, $5. Best 24 dissimilar blooms, C. J. Ryan, $3. 2. Ellwanger & Barry, Rochester, $2.

Best single dahlia, Ellwanger & Barry, Rochester, $2.

Roses.—Greatest variety, Ellwanger & Barry, Rochester, $5.

Best 24 dissimilar blooms, William Webb, Buffalo, $3. 2. Ellwanger & Barry, Rochester, $2.

Phloxes.—Best 10 varieties, Ellwanger & Barry, Rochester, $3. Best seedling, same, $2.

For superb collection, S. Moulson, Rochester, Diploma.

Verbenas.—Greatest variety, Wm. Webb, Buffalo, Silver Medal.

Best 12 varieties, Ellwanger & Barry, Rochester, $2.

German Asters.—Best collection, Mr. Tyler, Silver Medal. 2. William King, Rochester, $2.

AMATEUR LIST.

Greatest variety and quantity of flowers, William Newcomb, Pittstown, Silver Medal. 2. Mrs. Geo. J. Whitney, Rochester, $3.

Dahlias.—Greatest variety, William Newcomb, Silver Medal.

Phloxes.—Best six varieties, William Newcomb, $3.

Verbenas.—Greatest variety, Mrs. G. J. Whitney, Silver Medal.

Best seedling, William Newcomb, $2.

Best six varieties, Mrs. G. J. Whitney, $3.

Best three varieties, Mrs. John Williams, $2.

German Asters—Best collection, Wm. Newcomb, Small Silver Medal.

Pansies—Best and greatest variety, Miss S. Moulson, Sil. Medal.

GENERAL LIST.

Best collection of green-house plants, owned by exhibitor, Ellwanger & Barry, Rochester, Silver Medal. 2. C. J. Ryan, Rochester, $3.

Best floral design, A. Frost, & Co., Rochester, Silver Medal. 2. Miss F. Hooker, $3.

Best floral ornament, Mrs. Mary Devoe, Aurora, Cayuga county, Silver Medal. 2. Mrs. Wm. Newcomb, $3.

Best hand bouquet, flat, C. J. Ryan, $3. 2. Ellwanger & Barry, $2.

Best hand bouquet, round, C. J. Ryan. $3. 2. Wm. King, $2.

Best basket bouquet, with handle, Wm. Newcomb, Silver Medal.

For the most beautifully arranged basket of flowers, Miss Laura J. Whitney, Silver Medal.

Best collection of dried specimens of plants, Miss E. Ehle, Silver Medal.

Miss Emily A. Crafts, Utica, for a beautiful display of marine plants, Diploma.

S. B. Buckley, for a splendid moss vase bouquet, Diploma.

L. Witherell, for a collection of grasses, Diploma.

Mrs. L. E. Smith, Mechanicsville, splendid floral design of a lady on horseback, Silver Medal.

FRUITS.

APPLES AND PEARS.

Judges.—John A. Warder, Chairman, Cincinnati; Charles Downing, Newburgh; T. G. Yeomans, Walworth.

For the largest and best varieties of good table apples, 3 of each variety, grown by exhibitors, Ellwanger & Barry, Diploma, and Hovey's Colored Fruits. 2. McDowell Darrow, Greece, $5. 3. C. J. Ryan, Rochester; Transactions.

For best 12 varieties of table apples, N. Haywood, Brighton, $5. 2. B. Hodges, Buffalo, Transactions and $2.

Best basket of standared fruit, J. H. Watts, Rochester, Northern Spy apples, Silver Medal.

Pears.—For the largest number of varieties of good pears, John Morse, Cayuga Bridge, Diploma and Hovey's Colored Fruits. 2. Ellwanger & Barry, Rochester, $5. 3. Bissell & Hooker, Rochester, Transactions.

For the largest and Best collection of Autumn pears, Ellwanger & Barry, Diploma and $5.

Best collection of newly introduced pears, Ellwanger & Barry, Rochester, Diploma and Hovey's Colored Fruits.

For a large basket of assorted fruits, Ellwanger & Barry, Silver Medal.

The committee appointed to investigate the merits of the specimens exhibited in this class, *Apples* and *Pears*, endeavored to discharge their duties in such a manner as to give entire satisfaction to the competitors, to sustain the dignity of the great Agricultural Society of the State, and at the same time to be creditable to themselves. You may rest assured, therefore, that they spared themselves no labor in their efforts to accomplish these three objects, which must needs be very desirable.

The first investigations were made among the apples, and it was gratifying to observe the great number and variety of well-grown specimens of this standard fruit, and also to ascertain that increased attention has been paid to planting more and more of the very best sorts, to the exclusion of those indifferent varieties that formerly constituted the bulk of our orchards, but which are now voted out of good society.

There were thirty-five entries of apples, most of which embraced several varieties, and some very many kinds, and the quantities of each were generally abundant, so that the display was rich and exceedingly fine. Among the choicest sorts a few may be mentioned, as their being designated may add to the interest of this report: The beautiful Northern Spy, as exhibited in several collections, attracted especial notice, particularly those exhibited by J. H. Watts, Rochester. The Baldwin, in several collections, were fine. The Hawley, Early Joe, Late Strawberry, Primate, English Sweeting, Canada Red, Duchess of Oldenburgh, Dyer, &c., were considered very good. Collections of W. F. & E. Smith, Geneva; F. W. Lay, Greece; Shepherd & Cheney, Rochester; H. Robbins, Penfield; J. J. Thomas, Macedon; Thomas Roraback, Greece, and some smaller collections, were very fine. Among the evidences of keeping qualities, some apples of the crop of 1850 were presented, consisting of Russetts, Canada Red, and some others. Seedlings were exhibited for the premium—but, although some of them purported to be autumnal varieties, they were not in a condition to be examined fairly, as they were immature.

The *Father Apple*, exhibited by Stephen H. Ainsworth, was nearest maturity, and is highly recommended by those who are acquainted with its properties—but the committee do not feel willing to express a decided opinion upon the merits of any, until they can have a more extended acquaintance with the fruits, believing that much injury is often done to the best interests of science, by too high and too early recommendations of new seedlings. The *Early Jack* and a Fall Seedling Apple of Mr. Webbs from Darien were quite green and hard, and could not be passed upon.

The numerous collections of pears were very fine, and embraced all the standard varieties, some of those which have been found unworthy of culture, and a succession of aspirants for public favor, among the newer varieties. The specimens were generally very well grown, and exhibited in considerable numbers: they formed an exceedingly important and attractive portion of the display

The Bartlett, Oswego, Canandaigua, Onondaga, Seckel, Dix, Stevens' Genesee, Washington, Tyson, Fulton, &c., were sufficient evidence, if indeed, such were any longer wanting, of the superiority of many of our own native varieties. Of "*Autumn Pears*," and "*Newly Introduced Pears*," were only presented to the committee in one collection, Ellwanger & Barry's, to which the awards have been made; as they were regularly apportioned and set out upon the table and embraced fruit of acknowledged excellence, on the one hand, and such as give good promise among the novelties, viz: *Autumn Pears.*—White Doyenne, Duchess d'Orleans, Stevens' Genesee, Beurre Goubault, Swans' Orange, Bezi de Montigny, Seckel, Belle Lucrative, Bartlett, Henry IV, Gray Doyenne, Gansells Bergamot, Doyenne Boussock, Van Mons Leon LeClerc. *Newly Introduced Pears.*—Davi, Poire Auvin, Bergamot Thouin, Triomphe de Louvain, Beurre de Kosnig, Pater Noster, Bezi Sanspariel, Grand Soliel, Benoist, Fondante Van Mons, Colmar Musque, Beurre Beaumont, Doyenne Dillen, St. Andre, Bezi Veteran, Beurre Gris D'hiver Nouveau, Reine de Pay bas.

Smith, Thorp & Fanchett, of Syracuse, had fifteen new sorts in their collection, some of great excellence, and are entitled to great praise. Some of the pears are quite *new*, but they did not appear to have been arranged for competition for the award of "New Pears."

Without desiring to be partial, the committee feel that a basket of Bartletts, exhibited by H. G. Dickinson, of Lyons, deserves special notice on account of their handsome appearance—as does the exhibition of W. F. & E. Smith, of Geneva, in which the Canandaigua, Bartlett and Flemish Beauty, are very fine. But the basket of pears in the collection of Messrs. Ellwanger & Barry was a very superior collection and contributed greatly to secure the premium to this collection. J. Farley, of Rochester, had some beautifully colored Barletts, and Mr. H. N. Langworthy and Isaac Hill, as well as some others, showed some baskets of pears of great excellence.

In conclusion, the committee desire to renew their expression of gratification at beholding so fine a display of standard fruits, represented by well formed and perfected specimens. We would also suggest more definite regulations to be adopted in proposing premiums; in their absence, we have acted upon the principle that no collection could compete in two classes, which we would recommend to be adopted as a rule of the Society for future exhibitions.

FRUIT PICTURES.

Paintings of the Northern Spy, Wagner, Fameuse, Early Joe, Red Astrachan and Seek-no-further apples; and Virgalieu, Dearborn Seedling and Bartlett pears, exhibited by J. H. Watts, were very fine, as specimens of art, and serve to keep in remembrance the beautiful fruits they represent. They admirably answer the end proposed, but they appear to be flattering representations, being more highly colored than average samples—indeed they are probably selected from picked specimens, selected by a partial and admiring friend of fine fruits.

PEACHES, PLUMS AND NECTARINES.

Judges.—Hon. Samuel Miller, Ch'n, Rochester; S. S. Jackson, Cincinnati

Peaches.—Best 6 varieties, Ellwanger & Barry, Rochester, Diloma and $5. 2. John Donnellan, Greece, $3.

Best 3 varieties, C. J. Ryan & Co., Rochester, $3. 3. Henry M. Jennings, Irondequoit, Transactions.

Best 12 peaches, Morrison Ford, Palmyra, $2. 2. O. Ross, Penfield, Transactions.

Best seedling variety, 6 specimens, Bissell & Hooker, $3.

Plums.—Best collection of Plums, 6 specimens, each variety, Stephen H. Ainsworth, West Bloomfield, Diploma and $5. 2. Ellwanger & Barry, Rochester, $3.

Best 4 varieties of good plums, 6 specimens each, Isaac Hills, Rochester, $3. 2. Elisha Dorr, Albany, $2.

Best 12 plums, choice variety, O. Page, Batavia, $2. 2. Benjamin Fish, Rochester, Transactions.

Preserved Fruits.—Wm. R. Smith, Macedon, Silver Medal.

Valuable Seedling Peach.—James W. Caudle, Greece, $2. James Wells, Poughkeepsie, $2.

Valuable Clingstone Seedling.—James Lyon, Irondequoit, $2.

One volume Downing's Fruits awarded for fine exhibition of peaches, to Lewis Burtis, Rochester; Wm. Shepherd, Irondequoit; N. Haywood, Brighton; R. A. Brown, Greece; W. F. & E. Smith, Geneva; S. Moulson, Rochester; Wm. R. Smith, Macedon; Horace Lapham LaGrange; and to W. L. Booth, Kalamazoo, Mich., for nectarines, and O. Paige, Batavia, for plums.

One volume American Fruit Culturist, (Thomas',) A. B. Buckland, Brighton; Charles Kittridge, Greece; L. Fay, Portland; H. Robbins, Penfield; W. L. Booth, Kalamazoo, Mich; R. Osborne, Greece; H. G. Dickinson, Lyons.

J. W. Seward, Rochester, for basket plums

David McKie, of Mount Morris, for peaches, Barry's Fruit Garden.

The show of peaches offered this year was very fine. The best varieties now in season as exhibited, are the varieties called Crawford's Early Melocoton, Bergen's Yellow. The show of the first of these peaches is very abundant and its quality, size and bearing, in the opinion of your committee entitle it to stand in the first rank of peaches for the season just past. Bergen's Yellow is a little later and is just now the finest flavored peach of the two, perhaps it would be so, if both were equally in season. We are sure that no peach exhibited to us was of finer flavor than Bergen's Yellow and we think it will soon come to be, as it richly merits, universally cultivated in this section of country.

Four seedling peaches were exhibited to your committee of high merit, in their opinion. One was grown by James W. Caudle, of Greece, Monroe county, and was of good size and of high flavor; another was grown by Bissell and Hooker, of Rochester, and is entitled, perhaps, to equal commendations and the tree is represented by Mr. Hooker as being thrifty and an abundant bearer. Another seedling was grown by James Wells, of Poughkeepsie, from a stone of the Morris White, and, is in many respects, obviously superior to its distinguished parent. It is much larger, and judging from the specimens exhibited, is of higher flavor; it has, however, a slight tinge of red at the stone and a slight blush of the same color on the skin when much exposed on the sunny side; this may diminish its value with the ladies for preserving, but if the tree is as good a bearer, it is improved much in its general character upon the Morris White. The fourth seedling peach that we deemed worthy of notice is a cling-stone, of fine size and flavor, grown by James Lyon, of Irondequoit, Monroe county; this variety we deem, in all respects, worthy of commendation to those who cultivate cling-stone peaches—the committee would designate it as "Lyon's Yellow Cling," to distinguish it from a white cling of inferior quality, also grown by Mr. Lyon. The class of cling-stones are getting to be cultivated increasingly by growers in this region, for their value for transportation to a great distance without decay or injury. The collection of peaches exhibited by C. J. Ryan & Co., of Rochester, was very fine but the exhibitors had neglected to name most of them.

Two splendid baskets of peaches were exhibited by Lewis Burtis of Rochester, of the Crawford Early, which the committee thought entitled to commendation. A. B. Buckland exhibited some fine varieties of peaches; his Crawford's Early were scarcely excelled by any. Charles Kittridge, of Greece, exhibited two fine baskets of peaches, one of Crawford's Early; Crawford's Late Melocoton is not sure of ripening in Western New-York sufficiently early, (if at all,) to be sweet and excellent as it is seen in New-York city and in New-Jersey, but when fully ripe it is decidedly the best fruit of its season grown in our climate. L. Fay, of Portland, Chautauque county, exhibited six varieties of peaches, five of them of great excellence, namely: Red Cheek Melocoton, Lafayette Cling, Morris White and Old Mixon. Wm. Shephard, of Irondequoit exhibited eleven varieties of peaches, most of them very fine; his Early Crawford's had abundance of admirers. N. Haywood, Brighton, exhibited 4 varieties of peaches, one of them the Golden Empire, not yet fully matured, we deemed of excellent promise: H. Robbins, Penfield, exhibited five excellent varieties and excellent specimens of each, viz: Hill's Madeira, Yellow Melocoton, Lemon Cling, Bergen's Yellow, Jaques Rare

Ripe: Henry M. Jennings, Irondequoit, had 3 varieties of peaches, which we pronounced all very good, one of them appears of the same variety of Crawford's Early, but 8 or 10 days later: A. H. Norris, Stafford, exhibited 3 varieties of good peaches: W. L. Booth, Kalamazoo, Mich., sent us 2 excellent varieties of peaches, one named Claverac, was finely grown, and though not fully ripened on the tree, was deemed a fine peach and well worthy of cultivation, if a good bearer; the other variety was not named. He also sent a fair specimen of nectarines: Benjamin Fish, Rochester, exhibited 6 varieties of peaches, all very fine, and some of them worthy of special praise: R. H. Brown, Greece, exhibited 4 varieties of good peaches: O. Ross, Penfield, exhibited a plate of peaches, called Cooper's Mammoth, which were fully equal in size and flavor to any on the ground, and if the tree was as good a bearer as Crawford's Early, it might be safely called its superior, but it is said to be a very poor bearer: Robert Osborn, Greece, exhibited 3 varieties of peaches, two of them excellent, also a basket of peaches: W. F. & E. Smith, of Geneva, made a very fine show of 8 varieties of peaches: David McKie, of Mount Morris; Livingston Co., exhibited 28 varieties of peaches, some of them of great excellence, but sadly deficient in names; only five of them being furnished with that appendage, always valuable, and in a show for competition is indispensable. Zera Burr of Perrinton, exhibited two varieties of peaches. H. G. Dickinson, of Lyons, exhited a dozen of Crawford's Early, which were very fine. John Donnellan of Greece, 16 varieties of peaches, constituting a magnificent collection; his Bergen's Yellow was as fine a flavored peach as has been exhibited to us at this fair. Morrison Ford, of Palmyra, exhibited a dozen of Crawford's Early which were pronounced by us the best dozen on the ground. S. Moulson, of Rochester, also exhibited four fine peaches. Ellwanger & Barry, of Rochester made a very fine show with their peaches; they exhibited 11 varieties, viz: Crawford's Early, New-York Rareripe, Cooledge's Favorite, Jaques Rareripe, Large Red Rareripe, Jersey Rareripe, Cooper's Mammoth, Snow, Large Early York, Lemon Cling, George the Fourth. Bissell & Hooker's fine display of peaches consisted of the following ten varieties: Morris White, Malta, Crawford's Early, Old Mixon, Mixon Cling, Early Newington, Snow, Red Cheek Melocoton, Walter's Early, Reine de Vergers. S. H. Ainsworth, of West Bloomfield, exhibited several varieties of peaches well grown. Wm. R. Smith, of Macedon, exhibited twenty-three varieties of peaches, some of them very fine. Daniel Bnejamin, of Perrinton exhibited six varieties of peaches, two of them very fine.

In the department of plums, some fine specimens were exhibited: Isaac Hills, of Rochester, exhibited seven good varieties, well grown, viz: White Magnumbonum, Red Magnumbonum, Bolmar, Cooper, Princess Gage, Green Gage, Smith's Orleans. Samuel Miller, of Rochester, exhibited eleven varieties of plums, Bolmar, Hanford's Orleans, White Damson, Miller's large White Damson, French Prince, Smith's Orleans, Princess Gage, Golden Yellow Seedling, Reine Claude, and Magnum Bonum. Horace Lapman, Lagrange, New-York, exhibited a fine box of twenty plums, which were of the Yellow Egg variety, but called Coe's Golden Drop, they were magnificent looking plums. Benjamin Fish, exhibited five excellent varieties of plums, not all of them named correctly. J. W. Seward, Rochester, exhibited a basket of German Prunes, which were thought worthy of commendation. O. Page, of Batavia, exhibited one dozen fine Yellow Egg Plums. Elisha Dorr, Albany, exhibited twenty-three varieties of Plums, not all correctly named, the specimens of Schuyler's Gages, were thought fine. C. J. Hill, Rochester, exhibited a beautiful collection of Yellow Egg Plums. Ellwanger & Barry, Rochester, had a very fine collection, consisting of the following 16 varieties: Jefferson, Red Gage, Fellenberg, Yellow Gage, Diamond, Catalone Prune, Italian Prune, Emerald Drop, Yellow Egg, Early Orleans, Imperial Gage, White Damson, Duane's Purple, Reine Claude Blanche, October, and Lombard. Stephen H. Ainsworth, of West Bloomfield, exhibited ten varieties of plums, several of great excellence, of these the Jefferson deserves particular mention.

Preserving Ripe Fruits.—Your committee were much interested in the ripe fruits preserved in their own juice, without sugar or cooking, by placing them in a bottle, expelling the air in part and carbonizing the remainder by the action of heat applied to the bottle. Thirteen bottles of the fruit so preserved were exhibited to us by Wm. R. Smith, of Macedon, Wayne county, viz: 5 of cherries, 2 of peaches, one of strawberries, 3 of as many varieties of currants, 1 of blackberries, 1 of plums. Those bottles which your committee tasted were found of fine flavor and we deem the art of so preserving fruit of much value, but requiring so much nicety and care in the manner of doing it as to be slow in coming in to general use. This fruit, we presume, when carefully preserved will keep as long as may be desired.

The following is given us by Mr. Smith as his manner of preserving these fruits. They are preserved by placing the bottles, filled with the fruits, in cold water and raising the water to the boiling point as quickly as possible, then corking and sealing them immediately; some varieties of fruit will not fill the bottle with their own juice, those must be filled with boiling water.

QUINCES, GRAPES, CRANBERRIES, &c.

Judges.—Hon. E. W. Leavenworth, Ch'n, Syracuse; M. B. Bateham, Columbus, Ohio; R. G. Pardee, Palmyra.

Quinces.—Best 12 quinces of any variety, Dr. N. Winton, Havana, $3. 2. J. W. Seward, Rochester, Transactions.

Grapes.—Best and most extensive collection of good native grapes grown in the open air, Dr. R. T. Underhill, Croton Point, $5.

Best 3 varieties of native or grapes under glass, Bissel & Hooker, Rochester, $5. 2. H. L. Suydam, Geneva, $2.

Best dish of native grapes, Henry Paine, Lockport, Transactions. 2. H. Lovecroft, Rochester, Thomas' Fruits. S. H. Ainsworth, West Bloomfield, Thomas' Fruits. Mrs. Elisha Taylor, Buffalo, for Black Hamburg Grapes, Downing's Fruits.

Watermelons.—Best specimen, John Donnellan, Greece, $3. 2. W. T. Lawrence, Rochester, $2. Best collection of Watermelons, John Donnellan, Greece, $3.

Muskmelons.—Best specimens, H. N. Langworthy, Rochester, $3. 2. N. Culver, Arcadia, $2.

John Donnellan, Greece, assortment of Melons, Downing's Fruits. H. Rooker, Rochester, dish of filberts, Thomas' Fruits.

FOREIGN FRIUTS.

Judges—J. J. Thomas, Chairman, Macedon.

For six dishes of fine exotic grapes—Muscat of Alexandria, Golden Chasselas, and Black Hamburg, (one bunch of the latter 11 inches long and 6¼ broad,) Roswell L. Colt, Paterson, New Jersy, Small Silver Medal and Transactions.

John Stinson, Hamilton, Canada West, 3 dozen peaches, of Crawford's Early, many of the specimens over 10 inches in circumference, Transactions.

Commended as worthy of notice and the thanks of the Society.—A. E. Pardee, Rochester, 2 oranges from a tree planted by Washington.

W. S. Booth, Kalamazoo, Michigan, apples, peaches, nectarines, and pears.

Baxter's garden, Philadelphia, White Doyenne, or Virgalieu pear, measuring 3 inches in height and in diameter, exhibited by J. J. Thomas, Macedon.

Dr. Benjamin McVicar, Wisconsin, Columbia, plums and pears.

PAINTINGS, &c.

Best daguerreotype of a domestic animal, O. B. Evans, Buffalo, Diploma, for fat ox of Col. Sherwood.

STOVES, COOKING.

Judges.—Henry Wells, Chairman, Aurora, John Day, Jr., Rochester, John L. Clark, Palmyra.

Best cooking stove, for wood fire, "Davy Crockett," John M. French & Co., Rochester, Silver Medal. 2. Beardsley, Wilber & Newell, Waterville, Small Silver Medal.

Best cooking stove for coal, Warren, Sweatland & Co., Half Moon, Silver Medal. 2. J. C. Hermance, Albany, Small Silver Medal.

Best cooking range for families, James Cowles & Co., Rochester, Silver Medal.

Best furnace or other apparatus for warming houses, economy of construction and consumption of fuel, and security to premises taken into consideration, James Cowles & Co., Rochester, Silver Medal.

Coal furnace, an excellent arrangement for large buildings, combining great heating surface, and weight of metal. E. Y. Kneeland, Buffalo, Silver Medal.

"Dairy Maid," manufactured by J. S. & M. Peckham, Utica, exhibited by A. K. Amsden, Rochester, an article of much merit, not only adapted to the wants of the Dairy, but equally so to those of private families, very simple in construction, and a reasonable price, Diploma.

A. K. Amsden, set of fire and stove trimmings, of his manufacture, of superior merit, Trans.

Commended.—The Half Moon Air-Tight cooking stove, of superior casting and good workmanship.

The Salamander Stove, manufactured by D. S. Crandall, Lockport, well adapted to the wants of families. The summer arrangement is much approved.

PARLOR.

Judges.—John H. Tilman, Chairman, Geneva; Lucius H. Pratt, Buffalo; Wm. P. Cleveland, Waterville.

Best ornamental parlor stove, "Folding Door Parlor," Jewett & Root, Buffalo, Silver Medal. 2. S. H. Ransom & Co., "Persian," Albany, Small Silver Medal.

Best hall stove, A. K. Amsden, Rochester, "Davy's Coal Stove," made by Davy, Anthony & Phillips, Troy, Silver Medal. 2. John M. French & Co., Rochester, Small Silver Medal.

Race & Co., Seneca Falls, certificate for self-regulating parlor stoves, having heretofore received the premium.

Henry Ruttan, Cobourg, Canada West, diploma for new ventilating stove.

SILVER WARE, CUTLERY, &c.

Judges.—Benj. R. Norton, Chairman, Syracuse.

Best exhibition of silver ware, D. & G. McElwin, Rochester, Small Silver Medal.

400 samples of American cutlery, D. West, agent of Waterville Manufacturing Co., Diploma and Silver Medal.

Specimens of American cutlery, T. Waird, East Avon, Small Silver Medal. This is the first production of Mr. Waird, and very creditable to his skill.

Sample of butcher and other knives, Wm. Callen, Mendon, Small Silver Medal.

Sample of jewelry emblems, Norton & Seymour, Syracuse, entered for exhibition only, commended.

Case of fountain pens, Bishop & Codding, Rochester, Silver Medal.

Temperance emblems, T. Parsons, Buffalo, Silver Medal.

MISCELLANEOUS ARTICLES.

Judges.—C. Fletcher, Chairman, Indianapolis; A. Osborn, Watervliet; E. E. Platt, Albany.

Model of bridge, Roman Gay, highly commended.

Sample of clay candle moulds, A. Wilcox, East Bloomfield, Dip.

Obstetrical chair and supporter, Asa Blood, Milwaukie, Wisconsin, Diploma.

Willow baskets, Gen. R. Harmon, Wheatland, Transactions.

Sample of liquid cuticle, Orange Judd, New Haven, Ct., commended.

Specimens of flint enameled ware, Andrew J. Brackett, Dip.

One boy's sled, A. Douglass Miller, Rochester, Small Silver Medal.

Samples of Jamaica ginger, and perfumery, S. L. King, New-York, Diploma.

Gilt frame looking glasses, Lawson Annesley, Albany, Silver Medal.

Specimens of door plates and window signs, Benjamin W. Franklin, Rockton, Diploma.

SPECIAL REPORT.

The committee, to which were referred sundry articles for examination in the class of miscellaneous articles, respectfully report, that they have bestowed such attention on the subject as their time and opportunity would permit.

One of the first articles examined was samples of Oil of Peppermint, manufactured by H. G. & L. B. Hotchkiss, of Lyons, Wayne co., N. Y. From certificates and other evidence furnished by the proprieters, this Oil appears to be unusually pure and valuable, and meets with a ready sale in London, at a price considerably above other American Oils extracted from the same plant. The committee recommend that a small Silver Medal be awarded to Messrs. H. G. & L. B. Hotchkiss, for their skill in this branch of industry.

A Mineral Paint found on the farm of the Hon. Thomas Hawks, of Columbia, Herkimer co., N. Y., is said, by those who have used it mixed with oil, to form a valuable pigment. The committee regard it as worthy of further trial. Mr. C. P. Hunt, of Rockton, N. Y., presented several kinds of Ink, the principal merit of which, is its non-corroding character, it being free from acids; such an ink, if durable, must be valuable. Mr. Elisha Waters, of Troy, N. Y., also exhibited several specimens of black, blue, carmine and indelible inks, to which the committee could bestow but a passing notice.

Messrs. Taylor & Co. of Syracuse, deserve particular commendation, for the purity and excellence of their double refined Saleratus. They exhibited both the super-carbonate of Soda and

Potash These articles being of every day consumption in food, it is important that they be free from all impurities, and to encourage the manufacture of such, the committee recommend that a premium of three dollars be awarded to these Pearl and Soda ashes.

Mr. Geo H. Botsford, of Waterloo, N. Y., exhibited specimens of beautiful soap, with evidence of its excellence. A diploma is recommended to be awarded to Mr. B. Mr. Finkle, of Utica, had on exhibition improved Wire Heddles, used in weaving. From appearances, the committee are favorably impressed with this article; but the committee are not sufficiently informed to speak confidently of its merits.

DANIEL LEE, *Chairman.*

AGRICULTURAL IMPLEMENTS OR MACHINERY, NOT BEFORE NAMED.

Judges.—L. A. Spalding, Chairman, Lockport; R. S. Stevens.

Smut machine, L. W. Smith, Troy, having heretofore received the highest premium, is awarded the certificate of the Society.

Best smut machine, L. Durkee, Alden, Diploma.

Horse-power churning machine, Wheeler, Mellick & Co., Albany, Silver Medal.

One canal wheelbarrow, J. Rapalje & Co., Rochester, Transactions.

MACHINERY, OF METAL COMPOSITION, FOR GENERAL USES.

Judges.—John Mallory, Chairman, Penn Yan; Myron Adams, East Bloomfield; Nelson Nobles.

H. H. Grannis & Co., Rochester, 1 set tinman's machines, Dip.

Sangster & Co., Buffalo, patent spring lanterns and lamps, Silver Medal.

Groves & Mountenay, Buffalo, experimental gas meter, Silver Medal.

Allcott & Bros., Rochester, locomotive lamp and patent burner, Diploma.

Henry Wray, Rochester, locomotive lamp, Silver Medal.

A. Meneely and Son, West Troy, 1 chime bells, certificate; 1st premium awarded heretofore.

A. Meneely & Son, West Troy, ship bell, Silver Medal.

do. do. one case surveyor's instruments, Dip.

James Barnes, Franklin, Delaware county, stop coupling, for attaching whiffletrees to carriages, Diploma.

Chas. W. Russell, Washington, D. C., improved chimney cap ventilator, and centripetal fire place, Diploma.

John H. Jones, Rochester, card of re-cut files, and rasps, $3.

Robert Simpson, New-York, exhibited Singer's patent sewing machine, Silver Medal and Diploma.

J. D. White, Hartford, Ct., 1 engine lathe, Diploma.

C. W. Coe, Buffalo, 1 hand drill, Diploma.

S. Farnham & Son, Rochester, 1 universal chuck, Dip.

Duryee, Forsyth & Co., Railroad truck scale, $10 and Diploma.

Do. do. improved road scraper, $2.

Do. do. warehouse truck, Silver Medal.

Hitchcock & McMasters, Rochester, copying press, Silver Medal.

H. E. Smith, Fowlerville, 1 fan blower and bellows, Dip.

J. M. French, 1 miniature copper tea kettle and stand, $1.

Wm. Porter & Co., New-York, hand car and signal lamp, $3.

The judges would state that they were called to view 50 scales, of assorted sizes, made in the city of Rochester, by Duryee, Forsyth & Co., and Hitchcock & McMasters. Both of these companies have often exhibited their scales at previous Fairs, and received numerous diplomas. It can not be expected that the judges could assign a reason for a preference of the scales of one company over those of another, where the scales of both were so nicely adjusted that a five cent piece would turn a scale of 600 or 800 lbs. Their merits are too well established in public estimation to need our commendation. A railroad track scale, by Duryee, Forsyth & Co., we particularly examined and highly approved. Although weighing 30 tons, they weigh accurately small articles.

ARTICLES CONSTRUCTED OF WOOD.

Judges.—Andrew Dunlap, jr., Ch'n, Ovid; Wm. Fuller, Skaneateles.

Ornamental gilt artists' frame, Adam Elder, Roch., Silver Medal.

Ornamental gilt portrait frame, J. H. Thompson, Rochester, Small Silver Medal.

Miner's crossbar bee hive, T. B. Miner, Clinton, Diploma.

Spledid show case, E. P. Earle, Genèva, Small Silver Medal.

Beautiful show case, Silsbee, Buckley & Bennett, Geneva, Trans.

2 Water kegs, L. D. Heaton, Potsdam, Diploma.

Fancy milk pail, Jacob Galentine, Rush, Small Silver Medal.

Flour barrel and half barrel, Wm. F. Sterritt, Rochester, Trans.

Well wrought corn basket, James Stocum, Penfield, Trans.

Dozen fancy brooms, I. S. Chamberlain, Fort Plain, Trans.

Box fancy brooms, Joseph Wyckoff, Varick, Norton's Essay.

Cane, board, and log rules, Francis Dana, Rochester, Trans.

1 ox yoke, E. Sheldon. Sennett. Trans.

Two water filters and fountains, A. M. Badger, Rochester, Silver Medal.

Patent boot tree, Wm. Upfield, Lancaster, Ohio, Small S. Medal.

Right and left depressed iron screw bedstead, John D. Sanborn, Cowlesville, Small Silver Medal.

Varieties lasts for boots and shoes, and Payenized do. for India Rubbers, H. N. Curtis, Rochester, Diploma.

Camera obscura, E. Forbes, Albany, Silver Medal.

Improved writing desk, Norris & Flanders, Canton, St. Lawrence Co., Diploma.

Cook's patent flour cooling and bolting machine, Samuel Cook, Adams Basin, Diploma.

Apple paring and quartering machine, from Ohio, Diploma.

Commended.—Wm. Osgood, Rochester, improved Flutter wheel, for water powers.

ARTICLES MANUFACTURED OF LEATHER, INDIA RUBBER, GUTTA PERCHA, &C., NOT BEFORE NAMED.

Judges.—Peter Patterson, chairman, Livingston.

A. R. Prichard, Rochester, for trunks, Diploma.

N. G. Hawley, Rochester, book binding, Silver Medal.

A. M. Cross, Albany, best tanned leather, Silver Medal.

W. H. Harrington, Moravia, calf skins, Trans.

J. J. Holsley, Churchville, calf skins, Trans.

O. M. Seeley, Rochester, improved method of tanning sheep skins, Transactions.

J. F. Rothgangle, Rochester, specimen of glue, American Institute, Transactions.

F. Stetzenmager & Co., sample stone ware, American Institute.

J. W. Briggs, Cleveland, Ohio, improved horse collar, Trans.

Palmer & Co., Springfield, Mass., artificial leg, Diploma.

Peter Nessell, fine carriage top, Trans. American Institute.

G. E. Starkweather, Ohio, for his exhibition of curled hair and hair mattrasses, Silver Medal.

Dr. J. Peer, Rochester, dental preparations, Trans.

Charles A. Mott, Lansingburgh, mineral paint, Silver Medal.

J. W. Hatch & Co., Rochester, case boots and shoes, Silver Med.

Myron Strong & Co., Rochester, whip, Diploma.

G. V. Stevens, Rochester, 7 rolls oak-tanned leather, for machine belting, Trans.

ARTICLES COMPOSED OF CLOTH, FUR, &C., SUCH AS CAPS, HATS, FURS, UMBRELLAS, &C., NOT BEFORE MENTIONED.

Judges.—Wm. H. Watson, Chairman, Potsdam; Archibald Mc Lean, Caledonia, Theodore B. Hamilton.

Clark & Gilman, Rochester, 1st premium on hats, Diploma and $5.

G. Phillips, do. 2d do., Silver Medal and Trans.

Haywood & Son, do 3d do Small Silver Medal.

Clark & Gilman, Rochester, ladies' and children's fancy riding hats, 1st. premium, Silver Medal.

Haywood & Son, do 2d do, Small Silver Medal.

Clark & Gilman, Rochester, furs, 1st premium, $5.

G. Phillips, do., for a beautiful specimen of ladies' swans down caps, Silver Medal.

Altman & Stettheimer, Rochester, clothing, Diploma and Small Silver Medal.

Lovecraft and Cornwall, do do., Dip. and $5.

A. Mallory, Rochester, pasteboard boxes, Diploma.

F. W. Farnham & Co., Cohoes, fancy linen thread, Diploma.

Jesse K. Park, Albany, tracing linen and tracing paper, Small Silver Medal.

Commended.—G. Philips, for superior moleskin hats, for good workmanship, strength and durability.

A moleskin hat, exhibited by J. H. Tobin, of Rochester.

The Judges have to remark, that although the specimens submitted by competitors for their consideration were very numerous, yet all of them were found of such superior merit, that it was extremely difficult to determine the award of premiums.

IRON AND STEEL.

uages.—John Vernam, Chairman, Mount Morris; S. Richardson, Rochester; Alexander Williams, Henrietta.

Two coaches and buggy wagon, James Cunningham, Rochester, Diploma and Silver Medal.

Four cast-steel horse shoes and two springs, W. A. Sweet, Pompey, Transactions.

Two buggy wagons, John McMahon, Rochester, Silver Medal.

One top buggy wagon, James M. Southwick, Rochester, Small Medal.

Machine for cutting bolts and nuts, Z. W. Smith & Co., Honeoye, Small Silver Medal.

Lot of cast-steel augers, one pump auger, fence cap boring machine, Bernard Hewes, Rochester, Silver Medal.

Cask of smoothing irons, Brown & Mills, Mount Morris, Trans.

Dogs for planing machine, Joseph Adams & Son, Hadley, Mass., Transactions.

Model window fasteners and blinds, W. Race & Co., Seneca Falls, Transactions.

One model hubb and set of Phillip's patent boxes, &c., Downs, Silsby & Gould, Seneca Falls, Diploma.

Model steam engine, E. M. & J. E. Mix, Ithaca, Silver Medal.

Railroad truck box, George Herrick, Susquehanna, N. Y., Transactions.

Machine belt clasp, Albert M. Smith, Rochester, Transactions

Lathe machine, T. R. Bailey, Lockport, Diploma.

Calculating machine, Wm. N. Hanes, Rochester, Transactions.

Improved sewing machine, Akins & Felthousen, Ithaca, Small Silver Medal.

Bolt and screw cutting machine, Van Brocklin & McLean, Royalton, Diploma.

One bird cage, R. H. Barnard, Le Roy, Transactions.

Two safes with Lillie's safe locks, Troy, Silver Medal.

One democrat wagon, Soules & West, Trans.

One light buggy wagon, C. E. Stauring, Schenectady, Trans.

Chark's patent combined grinding and bolting mill, Edwin Clark, Lancaster city, Pennsylvania, Diploma and Silver Medal.

One-half dozen horse shoes, Wm. Cutting, Rochester, Trans.

Shingle machine, Smith & Harding, Rochester, Transactions.

Barometer and thermometer, D. Kendall, Pittsford, Diploma.

Buggy wagon with 2 seats, Goodrich & Root, Mt. Morris,

Family carriage, John G. King, Romulus, Transactions.

Washing machine, Joseph Hall, Unadilla, Transactions.

Chain pump and fixtures, J. W. Wheeler & Co., Seneca Falls, Silver medal,

Two force pumps, N. F. Marsh, Seneca Falls, Small Silver Med.

Morticing machine, E. H. Bennett, Warren, Ohio, Transactions.

Leather splitting gage, sample shoemaker's tools, G. G. Townsend, Mt. Morris, Diploma and Small Silver Medal.

Lot steel board rules, &c., Francis Dana, Rochester, Diploma.

Two ice cream freezers, H. B. Massel, Sunbury, Pa., Trans.

Patent tenon bit, E. H. Bennett, Warren, Ohio, Nortons' Essay.

Hat and coat stand, Bradley & Romans, East Bloomfield, Trans.

Candy machine, B. O'Brien, Rochester, Diploma.

Four pieces patent carriage axels, W. S. Saunders, Hastings, Transactions.

Set patent axles, H. Banker, Rochester, Diploma.

Stave cutting machine, C. B. Hutchinson, Waterloo, Diploma.

Patent cutter, Moses Miller, Fort Ann, Transactions.

One Miller's patent cutter, Taylor & Burt, Wayne co., Trans.

Samples of rotary engine pumps, A. W. Cary, Brockport, Diploma and Transactions.

Two cases saws and trowels, S. Flint, Rochester, Diploma and Silver Medal.

Eighteen sash locks, W. E. Arnold, Rochester, Transactions.

One pair patent railroad wheels, William Kidd, Rochester, Transactions.

Improved shifting buggy top, Hibbard & Green, Henrietta, Dip.

Three pair railroad car wheels, E. D. Carpenter & Co., Trans.

One cutter and 3 buggies, Schoonmaker & Smith, Rhinebeck, Small Silver Medal and Transactions.

Sample lightning rods, Johnson & Brothers, Clockville, Trans.

One buggy wagon, Loren & Carpenter, Troy, Diploma.

One salamander safe, lock and cover, C. J. Gaylor, New-York, Small Silver Medal and Transactions.

Dempsey's Rotary screening bran duster and smut machine, Balch, Eaton & Co., Baldwinsville, Diploma.

Samples American cast steel, Geo. H. Smith, Rochester, Dip.

Horizontal steam engine, 20 horse power, A. R. Swift, Rochester, Diploma.

Cast iron wagon boxes, James Bailey, North Chili, Diploma.

Cast steel horse shoes, Thomas Hall, Detroit, Michigan, Trans.

Light buggy waggon, Dusenbury & Arthur, New-York, Silver Medal.

Horse shoe swedge and sample shoes, John Henderson, Ithaca, Transactions.

Dutchess, Temple & Morse's patent grate, J. A. Campbell, Buffalo, Transactions.

One water ram, A. D. Smith, Meredith, Delaware co., Dip.

Screw cutting machine, McKnight & Co., Chicago, Diploma and Small Silver Medal.

Samples cast steel hammers and bit stocks, David Maydole & Co., Norwich, Small Silver Medal and Trans.

Paint Mill, Geo. W. Cleveland, Waterville, Trans.

Cast iron proof staffs, John F. Bush, Rochester, Dip.

Stone rubbing and sawing machine, R. D. Turner, Fort Wayne, Indiana, Diploma.

Guns and rifles, William Billinghurst, Rochester, Diploma.

Pleasure buggy, Bradley & Noble, Rushford, Small Silver Medal.

Carriage and buggy, Corris & Stewart, Rochester, Small Silver Medal.

Two cast iron lions, two do dogs, 2 do tree guards, one do rustic chair, two do. vases, two set tin machines, six guards, J. E. Cheney, Rochester, Small Silver Medal and Trans.

Scale beams and samples of iron railing, Martin Briggs, Rochester, Diploma.

Machine for cutting screws for bedsteads, J. F. Dresser, Tifflin, Ohio, commended.

Morticing and tenoning machine, Wm. Kegg, Lassellville, Trans.

Samples of furnace registers, rustic chairs, ventilators, vases, hall stands, flower stands, James Cowles & Co., Rochester, Diploma.

Samples of hardware and miscellaneous articles of their manufacture, Rochester Novelty Works, Diploma and commended.

Weeks' Rotary morticing machine, Isaac Butts, Rochester, Dip.

Lot of house carpenter's tools, do ship carpenter's tools- do cooper's and carpenter's tools, and a large variety of other articles, L. & J. White, Buffalo, Diploma and Silver Medal.

Lot of house carpenter's tools, do ship carpenter's tools, do cooper's and carpenter's tools, and a large variety of other articles, W. W. Bryan, Rochester, Diploma and Silver Medal.

Lot of house carpenter's tools, do ship carpenter's tools, do cooper's and carpenter's tools, and a large variety of other articles, D. R. Barton, Rochester, Diploma and Silver Medal.

Case hardened or steel converted axles, Alfred E. Smith Brownville, N. Y., Diploma and Transactions, Silver Medal awarded last year.

On examination of the foregoing three lots of tools, exhibited by Messrs. L. & J. White, W. W. Bryan, and D. R. Barton, the Judges find the display unequalled by any former exhibition, and the three lots, in many respects, are so nearly equal in point of style and finish, that they are unable to discriminate between them.

Awards by Special Committee.—Mrs. Alonzo Havens, Wales, Erie county, for a shawl manufactured by herself, Small Silver Medal.

Marsh & Co., New-York, for trusses, &c., Diploma.

H. C. Wanzer, Rochester, specimens of artificial teeth, Trans.

T. Sellick, New-York, for patent zinc paint, manufactured by the New Jersey Mining and Exploring Co., Diploma.

J. Dickerman, Troy, for marble mantlepiece, Diploma.

C. Wilson, Chicago, Illinois, for scales for testing gold, Diplom.

A. W. Cary, Brockport, for hose coupling, Transactions.

C. W. Sanders, New-York, for specimens of sheet music, Dip.

George Peck, Rochester, for specimens of chandeliers of superior workmanship, Diploma.

Weddle & Son, Rochester, for superior article of paint, Small Silver Medal.

E. Bradfield, Rochester, ornament made of prussiate of potash, Transactions.

E. A. Miller, Rochester, superior paste and water-proof blacking, Small Silver Medal.

George Ware, LeRoy, for superior teazles, Transactions.

A. & J. Allen, Fair Haven, Vermont, roofing tile, Transactions.

W. H. Kemp, New-York, superior article of gold leaf, Diploma.

Gardiner & Mix, Schoharie, for an oscillating roller axle wheel for wagon, a certificate; a Diploma and Silver Medal having been awarded last year.

A tile machine, for the manufacture of drain tile, was exhibited by Alvin Wilcox, of West Bloomfield, which appears to be an excellent machine, and a Diploma is awarded.

F. M. Mathie, Buffalo, three hand railroad cars, Diploma.

A. S. Babcock & Co., Albany, for a superior article of drain tile and pipe, Diploma.

John H. Whitlock, Troy, cast and turned Brittania ware, very superior, Silver Medal.

One hundred and seventy-nine agricultural publications, exhibited by D. M. Dewey, of Rochester, very tastefully arranged. The effort made by Mr. Dewey to bring these publications before the farmers of New-York, is praiseworthy, and a Diploma is awarded.

Miss E. Paxton, (blind,) Westmoreland, for flower vases, card basket, reticule, made of beads, and child's knit garment and tidy, $3.

C. S. Brewster, Geddes, exhibited a barrel of solar salt, of the first quality, and, in the opinion of the committee, *equal* if not *superior* to any made in this country, or in Europe, Silver Medal.

Lambert's Pictorial Anatomy, Transactions.

A specimen of Compound Rail for Railroads, offered by John F. Winslow, Troy, from the Mount Savage Works, Maryland, Silver Medal. This rail, by being compounded of two parts divided vertically, allows the joining to break joints, whereby it becomes a continuous rail, doing away with the plating and battering of the joint on the old rail, and admits a great saving in castings and fastenings at the joints, spiking down being entirely sufficient; and is found in use to cause a great saving in the wear and tear in machinery and the repairs of the track.

Specimens of American Blister and Cast Steel, exhibited by Dr. George H. Smith, manufactured by Dr. Smith and Dr. A. K. Eaton, Rochester, by their newly discovered process by which the time, and consequently the expense required, is very greatly reduced. The quality, particularly of the cast steel, after subjection to the most severe tests both as to strength and hardness, (as in turning chilled iron) and in the finest cutting edge, has been found to be unsurpassed. Whenever tried it has been admitted to be equal or superior to any hitherto used.

Mr. E. Phiney presented a large cube of Anthracite Coal weighing 2,200 lbs., from the Diamond Mine, Lackawana, Penn., owned by the Lackawana & Western Railroad Company. It is a beautiful specimen of that article, and it is thought, will compare with the Lehigh varieties. It is situated on a direct railroad route from Rochester to the Mines, and can be afforded there for a trifle less than $5.00, or at Ithaca for $3.95 per ton, Silver Medal.

Fine Arts.

Judges.—Lyman Clary and E. W. Leavenworth.

E. T. Whitney, Rochester, for daguerreotypes, first premium, Diploma.

M. F. Reynolds, Rochester, stained glass, Transactions.

Mrs. Ann Maria Treadwell Redfield, Rochester, chart of animal kingdom, Silver Medal.

Rich & Leslie, Rochester, samples of graining, Transaction.

F. Vandorn, Rochester, samples of graining, Diploma.

R. B. Appleby, Rochester, daguerreotypes, Transactions.

J. F. Thomas, Syracuse, specimen of die sinking and seal engraving, Silver Medal.

O. B. Evans, Buffalo, daguerreotypes, Silver Medal.

D. P. Newell, Rochester, window shades, Silver Medal.

PAYENIZING TIMBER.

Committee—Hon. Daniel Lee, Ch'n, C. Dewey, E. W. Leavenworth.

Wood is exposed to two natural forms of decay, called the *dry rot* and the *wet*. To counteract the operation of the causes tending to either or to both of these, has long been a great desideratum; scientific men have labored on this object, and various methods have been proposed. The introduction of some of the salts which were designed to have a specific action on the ligneous tissue, has been the prominent plan, but as this must be done by the use of aqueous solutions, an exposure to water and the action even of moist air, would slowly and surely remove the salt from the wood. To the use of common salt, acetate of iron, and even of corrosive sublimate, as in the *Kyanizing* process, this difficulty proved insuperable.

The *Payenizing* process is a vast improvement upon all the past, and may ultimately realize all the advantages to be expected from such appliances. This process is purely chemical and involves a principle not before introduced. It is this, one salt, as *copperas*, is introduced into the pores of the wood, as before; then another salt as *muriate of lime* (chloride of calcium) is injected in the wood; these two mutually decompose each other and form a nearly insoluble compound of *gypsum* (sulphate of lime) in the wood, and soluble *chloride of iron*. By the former, especially, the wood is made more firm, harder, not liable to warp, sustains a fine polish, is nearly incombustible and is made quite so by the addition of alum to the first solution, is liable to little expansion or contraction, increases nearly one-eighth in weight, and becomes in the arts a far more important and valuable material, and in some respects another substance. This is accounted for in the preparatory step. The wood is *steamed* in a strong cylinder of iron, under a pressure of 40 lbs., or more to the inch, by which its substances, soluble in such heat and pressure are removed, its coloring matter, mucilage, oily compounds and the like are removed from the wood and discharged from the cylinder. This leaves the wood in the state of ligneous matter, solid but porous and prepared to receive the solution of copperas. The air is exhausted from the cylinder by a powerful pump and the solution raised into the cylinder and forced, by a pressure of 160 lbs. to the inch, into the wood so prepared.

These particulars have oeen noticed to show the power by which the solutions are forced into the pores of the wood. The Payenized wood does not undergo either the *dry* or *wet* rot; doubtless for two reasons: that the portions most liable to either mode of decay have been removed, and that a hardening and preserving substance has been introduced. It should be added that Payenized materials withstand the action of the *Fungus Pit*, while those unprepared, immediately begin to decay under its action, as certified by the excellent chemist Dr. Miller.

This fact is of mighty consequence in the uses of wood. It is substantiated by abundant testimonials from England, where the Payenizing process was patented, and has been in operation for years. It is confirmed by the statement of B. P. Johnson, Esq., the active and accurate Secretary of the State Agricultural Society, who has just returned from England. In the use of Elm plank, on a plank road, Judge Buel has stated to the committee the fact of its not warping on the ground, as the Elm does before being *Payenized.* Payenized timber is found to resist the action of the worms and animals of seawater, which are so destructive to docks and wharves. The testimonials from England, on this subject, are as full as can be desired. All that seems necessary, and this is essential, and on it the approval implied by the committee is based, that the saline matters injected into the wood should be made fully and completely to penetrate every part of the wood or materials operated upon. In ship-building, plank and railroads, in flooring and roofing, and the manufacture of chairs, furniture, and articles innumerable, Payenized wood promises to be immensely valuable. It is not necessary to enlarge on the applications of this preparation, as the extent of them is not conceivable.

The committee are not prepared to report on the proposed use of Payenized wood by the American Patent Wooden Railway Company. The statements and calculations in the prospectus of the company, are certainly plausible—and, should they be sustained, by experiment, the plan will be adopted. It only seems necessary that the *Payenized rails* shall be found, on trial, to be cheaper than those of iron. That Payenized timber will come into extensive use, the committee entertain no doubt. It can only be necessary for the facts to be circulated among our intelligent and enterprizing citizens.

Extract from Report on Rail Car and Wheels, exhibited at the Fair, by Mr. Horace W. Woodruff, Jefferson County.

Col. L. G. Morris, from the committee appointed on the subject, reported that he examined the car, and that the wood work is of the very best kind, and the wheels are so constructed that should one of them break, their position is retained upon the track, in a very great degree lessening the chance of running off the track, and reducing the risk of railroad conveyance. Diploma.

WINE.

Judges.—John A. King, Chairman, Jamaica; J. Watson Webb, New-York; L. F. Allen, Black Rock; Samuel Miller, John Williams, Rochester, John A. Warden, M. D., Cincinnati; G. W. Holly, Niagara Falls.

Mrs. S. W. Updike, best currant wine, made in 1847, Diploma.

Ebenezer Sherman, Crawford, Orange county, currant wine, possessing an agreeable Malaga flavor.

H. N. Langworthy, Irondequoit, White currant wine, Malaga flavor.

A. H. Morris, Stafford, domestic wine, from the Clinton grape, richly sugared.

Dry Catawba wines, from Cincinnati, compared together as to their respective years of vintage.—1850. Best, G. Sleath, Diploma. 2. L. Rehfuss. 3. Thomas H. Brandt. 4. J. Shaub, (sour.)

1849.—Best, R. Buchanan, Diploma. 2. Corneau & Son. 3. Mr. Ware.

1848.—Best, S. Rintz, Diploma. 2. L. Rehfuss, (sample No. 3.) 3. L. Rehfuss, (sample No. 2.) 4. T. H. Yeatman.

1845.—L. Rehfuss, a sample of very delicate and excellent wine, Diploma.

Sparkling Wines.—Samples of Isabella and of Catawba; the former were pronounced the best; the latter, sparkling Catawba, was then compared with a bottle of the best *Heidsick*, and pronounced, by the committee, *very nearly equal to it.*

The committee on Wines beg leave to report the result of their trial of the various native wines offered for examination. Of the several preparations from Elderberry, Currant and Cherry, the committee would remark that however agreeable or useful they may be for domestic use, they can hardly be ranked in competition with wines prepared from the grape. A bottle of currant wine made by Mrs. Updike in 1847, was pronounced the best of the samples presented. No. 214, also a currant wine, had a pleasant malmsey flavor. No. 271, a white currant wine, had the taste of the Malaga wines. No. 218, a domestic wine from the Clinton grape was of fine color and richly sugared. Sugar should be avoided in the manufacture of all dry wines. The committee next proceeded to test more critically the various samples of light wines, sent from the Rhine of America, manufactured upon the banks of the Ohio, near Cincinnati. These wines were divided into four classes, No. 1 being the best; and the vintages of the same year put in competition with each other.

For the year 1850 there were the following samples:

Mr. Shaub's dry Catawba, ... sour.
Mr. Sleath's, do do .... No. 1 Best.
Mr. Rehfuss, do do .... No. 2.
Mr. Brandt's, do do .... No. 3.

1849. Mr. Buchanan, dry Catawba,................. No. 1, best.
Corneau & Son, do do .... No. 2.
Mr. Ware, do do .... No. 3.

1848. Mr. Rintz, dry Catawba,.................. No. 1. Best.
Mr. Rehfuss, do do (per sample No. 3,).. No. 2.
do do do do (" " No. 2,).. No. 3.
Mr. Yeatman, do do (" " No. 4,).. No. 4.

1845. Mr. Rehfuss one sample, a very delicate and excellent wine. Last, but not least, were two samples from Mr. Longworth —the sparkling Isabella and sparkling Catawba. The first was pronounced the best, and very fine. The second was also considered a very excellent quality of wine.

There was also presented by Mr. Sleath, a sample of fair quality of brandy, made from the native grape. All the samples of wine marked No. 1, were very fruity, delicate and well flavored, clear and lively. Indeed, Mr. Rintz, No. 1, 1848, and Mr. Rehfuss' No. 3, 1848, and No. 2, 1850, were of excellent quality and flavor. There are also, many worse brands than Mr. Brandt's No. 3, 1850. Mr. Buchanan's No. 1, 1849, was a very excellent wine; and Mr. Corneau's No. 2, of the same year, was also of fine quality. In Mr. Longworth's sparkling Isabella, the committee thought they could discover a slight taste of some other native grapes, probably introduced to improve its flavor. The character of the Catawba grape being superior to that of the Isabella, the committee doubt not that experience and care in the manufacture of the sparkling Catawba, will render it superior to the Isabella. A bottle of Mr. Longworth's sparkling Catawba was also tested and compared with a sample of the best Heidsick, and pronounced to be very nearly equal to it. Some remarks upon the soil adapted to the growth of the grape, and the manufacture of wine from it, with some statistics on the subject, and also some facts relating to the subject generally, contained in a letter from Mr. Rehfuss, of Cincinnati, who is engaged in the manufacture of wine, are appended as part of our report, furnishing as it does, the best and most specific information upon the subject to which it refers. All which is respectfully submitted.

LETTER OF WILLIAM L. REHFUSS.

Cincinnati, September 1851.

DR. J. A. WARDER,—I send you six bottles of my Catawba Wine, No. 1, 1845, specific gravity of the must 1,078. This Wine is over four years bottled; it kept very well; shows a little sediment and crystals of cream of tartar. The year 1845 was not favorable to wine-raising. No. 2, 1848. First run. Specific gravity of the must, 1,095; specific gravity of the wine, 0,991. This wine will speak for itself. No. 3, two bottles, 1848. First run, two parts, and one part pressed. Specific gravity of the must and wine, similar to No. 2. Of No. 3, I will have 3,000 to 3,500 bottles, ready for shipping this fall. The price here is $6.50 per dozen, packed in boxes.

No. 4, 1848. From Kentucky. Similar to the wines above. Specific gravity of the must about 10 degrees lower than on our side of the river. No. 5, specific gravity of the must 1,080; a wine, when cellar-ripe, about two years, will have a fine bouquet, free from malic acid, and less of tartaric acid. I mixed the soil with silicious potassa early in the spring; the roots found the necessary quantity of potassa, or cream of tartar; the free malic and citric acid were converted into tartaric, and a more full maturity of the grapes brought on. The bitartrate of potassa is mostly all precipitated after the first fermentation. The strewing of wood ashes will have the same effect as silicious potassa. The raising of vines and making of wines, is mostly in the hands of the Germans here. They have adopted the same mode of training and fermentation as is practiced in the southern part of Germany, in the Rhenish country, as the climates are nearly equal; but our Catawba wants less trimming. The people here, not acquainted with, nor accustomed to, Rhenish wines, and who were using highly brandied, and very seldom properly fermented wines, as Madeira, Port, Malaga, and Sherry, judged our wines, at first, to be hard and weak, or called it pleasant Cider. But there are thousands, now, who appreciate the bouquet of a pure Catawba wine, when of proper age, the grapes cut when fully matured, and fermented in good cellars and proper barrels. The physicians have already detected its restorative properties and advise it for convalescents.

By my experiments, during a period of six years, I am convinced that our climate is fully adapted to the raising of wines. By comparing the specific gravity or the quantity of sugar in our Catawba must, with the must of the grapes in Europe, since 1844, our Catawba must is found to exceed European, mostly, more than 10 degrees. Besides this, we never, even in our worst years, will have a wine below the medium of Europe, and of less failure than there.

Respectfully,

L. REHFUSS.

The above valuable letter of Mr. Rehfuss did not reach Dr. Warder, at Rochester, until after the committee had held their examination. The scientific application by Mr. R., of a special manure, referred to in his letter, is a very interesting experiment, and, doubtless, will prove of great value to the cultivators of the grape.

MUSICAL INSTRUMENTS.

Judges.—Hon. A. B. Conger, Chairman.

The committee on Musical Instruments, Class D. No. 67, beg leave to report, that they entered upon their arduous labors, rendered the more so by the absence of any precedent, of any report in the department of the records of the Society, to which they had access, and by causes connected with the insufficient accommo dation of the larger instruments they were called upon to inspect. In view of these impediments, in the way of discharging to a degree of perfection, which would have been more agreeable to your committee; a duty in which every nice vibration should be carefully weighed, and the relative merits of instruments suited to all tastes, either of judgment or natural sensibiliy more correctly stated, your committee would suggest, that at all coming Fairs, this division of the manufacturers' hall, should be so arranged as to be in point of fact, an apartment by itself, capable by the aid of windows and doors of excluding all extremes of temperature, and regulating the admission of spectators; that all future judges may, with all necessary seclusion, be able to discern all variations of range and purity of tone, delicacy of touch, and the like, with greater ease and satisfaction to themselves, than your committee have been able to gain, and with a greater probability of expressing such judgment as may satisfy, not only the agricultural, but the musical community.

Your committee would cheerfully state, in regard to the pianos exhibited in competition for the prizes to be awarded, that they are each in their style, most excellent instruments, of elegant external finish; no expense having seemingly been spared to attract the public eye, and all worthy of commanding ears, not over fastidious. As your committee have frankly avowed the unsatisfactory circumstances, under which they were called upon to decide, what is mainly a question of taste after all, and are in obedience to the President's circular, desired to furnish their reasons on which they have based their method of judgment, would express with equal frankness, that under the circumstances of the case, they have been forced more to regard these instruments as in the light of a mechanical exhibition, than of a purely musical one, and they hope that this method of judgment may seem appropriate to an institution, which is eliciting for wise purposes of future application as well as present use, all the mechanical talent and ingenuity of the State, as well as right to the exhibitors themselves, who have shared with your committee the unfavorable circumstances attending this branch of the exhibition.

And your committee are called upon to record as explanatory of their award of the Diploma, to the exhibition of two Rosewood instruments, numbered 64, and as well for the information which they thought was proper to communicate to the public; as from a sense of justice to the inventor, whose merit might have been otherwise merged in the eclat gained by the manufacturer, that the Rosewood Piano of 7 octaves, with carved drapery on the rim and plinth, of Rosewood, with mother of pearl keys, and metalic plate likewise so ornamented, has new and many contrivances, the invention of Mr. Dwight Gibbons, now of the city of Rochester, and which your committee would briefly notice.

1. An alto-sostenuto or over bracket bridge, of composition and underlined with vellum, so applied as to secure a greater solidity to the pins which hold the treble strings and to sustain the sounding board, superceding with all, the ordinary wooden bracket of a more fragile nature.

2. The sinking of the surface of the metalic frame beneath that of the wooden bridges, which sustain the strings between the points of vibration, by which all metalic jingle or the possibility thereof is prevented.

3. The Iso-baron damper, by which an even touch is secured to the keys, whether the damper is down or up.

4. The Iso-chordon scale, by which the unequal tension of the two strings which are struck for each note throughout the instrument, excepting the few deepest strings of the basso-scale, is remedied on simple and scientific principles.

The other instrument of 7¼ octaves, with a sub-bass attachment of *two octaves* and great power, to which the title or designation of *Pod-és Chantalon* may well be applied, is designed by Mr. Gibbons, to give to the square pianos the orchestral strength of the Erard grand at much less cost. The merit of the application of this sub-bass attachment is very great, and your committee would beg to recommend, that one of your secretaries be specially charged to grant from the funds of the society to Mr. Gibbons, what aid might, if at all be found necessary, in procuring a patent for this attachment, (so great an improvement upon the French model,) as well as for his other very ingenious essays, towards the perfection of so valuable and popular an instrument as the Piano Forte.

Your committee would also notice in both these instruments, the use of the capsule flange, on which centers each hammer, both being so arranged as to secure an easy play to the butt, and a rapid transfer adjustment of the same.

Your committee cannot conclude this already lengthy report, without noticing two works; the one, as evincing the pursuit of an end under circumstances of great difficulty; the other, as the almost infantile startings of an idea, which may realize great things to the concert-going world. The one, a violin, of really good tone, made when the eye could scarcely discern the skill of the hand, and the other, an attempt of procuring from one performer, by the aids of keys, as in the piano forte, the benefit of an orchestra of real performers. Your committee hope, that some share of the success and fame, which, under similar circumstances, enured to a Prescott, in a higher range of art, may fall to the lot of the first of these youthful competitors, and that the glory which crowns the successors of Fulton in the development of his first mechanical essay, may await the followers of the second one, if it never descends upon his own name.

Your committee would further suggest, that all specimens of sheet music presented for any *prize*, be *entered* in future by the publishers thereof *only;* dealers being permitted to *exhibit* music published by others as they may please.

Your committee would award the following premiums:

To Frederick Starr, of Rochester, N. Y., the Diploma of the Society, for general and ingenious excellence, in the construction of his Piano Forte of 7 octaves.

To Frederick Starr, Rochester, N. Y., a Silver Medal, (large) for a sub-bass attachment of two octaves, to an instrument of 7¼ octaves.

To Dwight Gibbons, the ingenious inventor of the sub-bass, applied as exhibited, a special testimonial for mechanical merit in his profession, and if the Secretaries cannot grant under the rules of the Society, a Diploma.

To J. D. Hutchinson, Bennington, N. Y., a Silver Medal, for an excellent violin, finished under almost a complete loss of the power of the visual organs.

To Samuel Waters, Avon, Small Silver Medal, for his viol-orchestra.

To Samuel Waters, Avon, exhibiting an Æolian Piano Forte, Small Silver Medal.

To Geo. Dutton, Jr. exhibiting one of Carhart's Melodeons, a copy of Transactions.

To Geo. W. Clark, exhibiting Mellophene, a copy of Trans.

To Alexander Grant, exhibiting specimens of sheet music, from the House of W. Hall & Son, a copy of Transactions.

ANNUAL MEETING, JANUARY 21, 22, 1852.

At 12 o'clock, the President of the Society, Mr. Delafield, assumed the chair at the Assembly Chamber.

The Secretary, Mr. Johnson, read the annual report of the Society,* which was, on motion of Hon. John A. King, accepted.

Mr. Tucker, the Treasurer, read his report:

RECEIPTS.

Balance from last year,	$2,413	07
Silver plate on hand,	230	00
Cash at annual meeting,	121	00
From State Fair,	11,954	25
From the State,	880	43
Rochester Committee,	799	10
Life members,	130	00
Interest on investments,	490	00
Sundries,	201	00
Making total receipts of the year,	$17,218	85

EXPENDITURES.

Premiums,	$5,155	73
Expenses of Fair,	3,231	49
County surveys,	638	24
Library and agricultural museum,	373	07
Postages and Express,	223	18
Miscellaneous,	398	21

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* See Ante, Page 3.

Salaries, &c.,	$1,900 13
Incidental expenses,	190 34
Printing, advertising, &c.,	434 89
	$12,545 28
Cash balance,	$4,543 57
Plate for premiums,	130 00
	$17,218 88
Invested funds,	$7,000 00

Hon. A. Z. McCarty, of Oswego, moved a committee of three from each Judicial District, to nominate officers, and recommend a place for holding the next Fair; the committee to be chosen by members of the Society present from the respective districts.

Mr. Nott, from Albany, opposed the motion, and was in favor of having the election made in open meeting of the Society, by ballot. Judge Cheever, Gen. Viele, Mr. McCarty, Mr. Taylor and J. A. King advocated the motion. Mr. Bloss moved a substitute, that the committee consist of 128 members, one from each Assembly District; this was lost. Mr. Gould moved a committee of one from each Senate District; this was lost, and the original resolution adopted.

The members from the several Judicial Districts reported the following committee, under Mr. McCarty's resolution, and the committee was appointed by the Society.

First District—J. E. Develin, E. D. Morgan, Russell Smith.
Second District—John A. King, Lewis G. Morris, William Kelly.
Third District—Geo. Vail, E. P. Prentice, Anthony Van Bergen.
Fourth District—J. T. Blanchard, Eli W. Rogers, Leroy Mowry.
Fifth District—John Butterfield, A. Z. McCarty, Jo'n A. Sherman.
Sixth District—Henry S. Randall, Wm. Rathbone, Josiah B. Williams.

Seventh District—J. W. Bissell, Charles Lee, Robert Rome.

Eighth District—Lewis F. Allen, Levi Fisk, John A. McElwaine.

The committee retired; and the Society took a recess until 4 o'clock, P. M.

After recess; the President in the chair,

Hon. John A. King, from the committee of nominations, reported:

That the *City of Utica be recommended* as the place for holding the next Fair, provided the requirements of the Executive Committee be complied with.

The names of the following gentlemen were reported for officers the ensuing year:

President—HENRY WAGER, of Oneida.

Vice-Presidents—James Monroe, New-York; Lewis G. Morris, Westchester; Anthony Van Bergen, Greene; Winslow C. Watson, Essex; Theodore S. Faxton, Oneida; Olcott C. Chamberlain, Otsego; Charles Lee, Yates; John A. McElwaine, Wyoming.

Corresponding Secretary—B. P. Johnson, Albany.

Recording Secretary—Erastus Corning, jr., Albany.

Treasurer—Luther Tucker, Albany.

Executive Committee—William Kelly, Rhinebeck; J. T. Blanchard, Saratoga; J. A. Corey, Saratoga; John Butterfield, Utica; J. B. Burnet, Syracuse.

The report of the committee was accepted, and the gentlemen named were elected by ballot, (P. Crispel, jr., of Ulster, and H. T. E. Foster, of Seneca, tellers.)

Mr. Bloss presented resolutions from the Monroe County Agricultural Society, on the subject of a division of the Society, or for such a change as will meet the wants and wishes of the people of Western New-York, and in relation to the practice of requiring localities to pay the expense of the Fairs, and for use of tent—and suggestions for alteration of Premium lists, which, after discussion were laid on the table.

Resolutions from Clinton County Agricultural Society in favor of an Agricultural College and Experimental Farm, were also laid upon the table, as the Executive Committee had adopted a resolution for a memorial to the Legislature, for the establishment of an Agricultural School and Farm, on behalf of the Society.

The Society took a recess until 7 P. M.

Wednesday Evening.

The Society met, and the President, Mr. **Delafield**, delivered the following

ADDRESS

On presenting the Medals of the Society to its members who received awards at the Great Exhibition in London.

Gentlemen,—When the invitation from Britain's Queen reached our shores to send the works of our ingenuity and industry for exhibition in London, and in competition with like works from other parts of the world, the first impression on my mind was adverse to the proposition. This impression originated probably from recollections of the state of art and science and the condition of society in that country, during a residence of several years. Aware, also, of the difficulties to be encountered from the impracticability of any well arranged system or unity of action among our several States, a faint hope only was indulged that we could return from the World's Fair either gratified or satisfied. Viewing the mighty effort, at this day—its termination and recorded awards—the wonderful display of art, of skill, and of labor—the question may be entertained whether a preponderance of good or evil is to flow from the influences of the well intended undertaking. Honor and praise are justly due to Britain's Royal Prince for the conception and accomplishment of the vast design; a design of benevolence and good will to the human race. It is yet too early for any decided benefits or advantages to be manifest; neither has time elapsed sufficient to develop the influences fondly entertained by many.

Two distinct characteristics seem to have stamped their features on the Industrial Exhibition. The one is UTILITY, displayed in objects designed to promote the sustenance, the comforts, and the happiness of man; the other is *Ornament* and *Luxury*, chiefly combined to stimulate and gratify the senses.

The first character, *Utility*, was a distinctive feature in the productions contributed by the United States; while Luxurious Ornament highly distinguished the productions from Europe and from Asia.

If these distinctions are true, they are portentous as to the future; and we may well rejoice that *our* countrymen—that *you*, gentlemen, who are to receive an honorable distinction for talent devoted to *Utility*, belong to and are identified with the class of benefactors of the human race.

In all nations there are persons who, unhappily for themselves, disregard knowledge; who, having but little information, are content to live and labor under every disadvantage. They never rise above their fellows; for, as neither pleasure nor profit can be derived from them, they are compelled to labor generally with strong application of physical force, but none of mind; they have no idea of the value of knowledge, and the paths it opens to honor and wealth. This remark occurs to me as I view this mass of Essex county ore:* it is the rich and valuable ore, taken from the mountain masses belonging to the "Adirondac Iron and Steel Company." I have somewhere met with an apt illustration of the deficiency of knowledge, and the benefits of its due application, as evidenced in the proprietors of the Adirondac Company.† Thus, the man who disregards knowledge, "would deny stoutly the existence of a knife blade in this mass of iron ore; yet there it certainly is—there it lies, where no labor can draw it forth in the present condition of this ore. Turn this mass, shape it as you will, it is neither knife, nor steel, nor is it iron; it is but *ore*. Fashion this ore as you may, it will not cut as well as the shell of an oyster; it needs knowledge to separate the iron from other matter; labor will not separate it more readily than it will cause wheat to grow productively on a naked granite rock. We need to know that *heat*, intense heat alone, will separate the parts and give us iron. Yet heat alone will not give up the knife blade; other substances must be added to the ore to allow the iron to run as a liquid, escaping from all impurities. Yet *this* iron will not give up the knife blade; by other results of knowledge it (the iron) must become *steel*—steel of a peculiar property, and requiring niceties in the process which study and knowledge alone can give: it is from this steel the knife blade is derived. What an amount of *thought*, *invention*, and machinery is necessary to produce so simple a thing as a shilling knife! All the *strength* of all the men that ever lived could never extract a knife blade from this mass of ore!" And when at last the knife blade is brought forth, it may be asked, with much concern whether it is now worth the handle, seeing the cost, the wear and tear of mind, of body, and of time consumed in its production. This question is not to be solved, as is sometimes attempted, by speculative theory or forced expedients; the quantum of demand, in fair, free, open competition, must decide it.

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* This ore has 70 per cent. of iron.

† "The Results of Machinery."

We are said to be a whittling nation; knife blades are therefore in demand. This pleasurable amusement, creating a demand for blades, has so sharpened our wits and extended our knowledge, that we now can reach the blade fitted for whittling, and blades for all cutting implements, with comparative economy, securing to the maker a sufficient compensation. But whittling blades are luxuries, not necessaries of life, and the production may be pushed too far, like many other non-essential objects; or some clever neighbor may exceed us in knowledge, and apply a process whereby he can afford to supply blades, undermining our accustomed profits. This, however, is the result of competition; it arises from the natural, legitimate, and noble contest for the acquisition and application of knowledge, compelling us to keep peace with the improvement, or to apply the share of knowledge we do possess to such objects as from utility or ornament are in request, or to seek some other mode of life better suited to our talent.

As a farmer, these truths are always before me as applicable to our calling, whether as to making of knife blades or steam engines—cotton goods or woolen fabrics. It is now quite apparent that when my neighbor applies more knowledge to his soil than I do, he produces greater quantities of wheat or grass from an acre; and thus, wide awake, his profits increases while mine may recede. So again, like the manufacturers, we collectively produce more wheat than is demanded for a season, and the value falls below our accustomed prices and wishes; we cultivate less, and in a year find ourselves reinstated in profits; if not, we turn to other grains or other objects connected with the *necessities* of life, and never fail, in any series of years, to find all that our reasonable wishes may require. Repining or complaining is of no avail; any endeavor to interfere with the free action of near or distant neighbors, with a hope of forcing better results to our own mismanaged or ill-judged proceedings, is ungenerous, unjust, and unworthy—ever tending to enmity, to the benefit of the few, and disadvantage of the many. These views naturally arise, when contemplating the successful organization of associations in our State, entering boldly into competition with the manufactures of other nations. It is a proud triumph for our industry and sagacity! Years of success have enriched our Eastern neighbors in various departments; nor are we behind our brethren in the application of industry, where circumstances demand its use and capital finds a safe return by its investment. We have an illustration in the movement to produce steel, of unsurpassed excellence or qualities from the mountains of iron ore within our borders.

To the Adirondac Company belongs the honor of establishing, as I am informed, the first successful manufacture of *cast steel* in the United States, and I believe it stands alone and unrivalled in this very important business. With a stock recently on hand consisting of 300 tons of bar iron, 400 tons of pig metal, 120 tons of cast steel in ingots, 50 tons of finished cast steel, 100 tons of quarried iron ore, and other property, valued at one million of dollars, this association presents to us extraordinary features of utility and power.*

Its products were exhibited at the World's Fair, arranged in section No. 1, class No. 1, and for their excellence received from the Commissioners a *Prize Medal.*

To you, sir, (A. E. Brown, Esq.,) as representing the Adirondac Iron and Steel Company, I now have the pleasure to present the Gold Medal of the New-York State Agricultural Society, pursuant to a resolution of the executive board, passed on the 9th day of May last. Your association is also entitled to the Society's Silver Medal, for the honorable mention bestowed on your cast iron and steel by the Royal Commissioners: it affords me much pleasure to present to you this additional testimonial of excellence.

Following the order of the sections and classes of the Industrial Exhibition, we find a display of American wheat, presented by Mr. Thomas Bell, of Westchester; another prepared by General Rawson Harmon, of Monroe; and one other by Mr. William Hotchkiss, of Lewiston; and thirty varieties of Indian corn, exhibited by Mr. B. B. Kirtland, of Rensselaer.

These varieties of our wheat and corn were arranged in the Crystal Palace, among the vegetable and animal products in use as human food. As wheat forms the principal nutritious food of the world, claiming the industrious application of labor over the greater part of Europe, throughout temperate regions of Asia, along the northern kingdoms of Africa, and extending far into the northern and southern regions of the American continents; as it has been cultivated from time immemorial, and has produced in various climates and soils *many varieties;* it is surprising that so little is generally known of the distinct varieties best adapted to particular climates—it is surprising that in Great Britain, in our own country and State, we are yet to learn the variety which will yield the greatest and best amount of human food?

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* See pamphlet, entitled "Advantages of the Works and Property of the Adirondac Iron and Steel Company, for the Manufacture of Cast Steel," &c., &c.

At the Industrial Exhibition, twenty-six premiums only were distributed for specimens of wheat; of these, *five* were awarded to British farmers, *three* to France, *three* to Russia, *three* to Australia, *three* to the United States, and one each, or severally, to other nations. We have reason to believe that, among the varieties sent from this State, one or more were in all respects equal to the best specimen exhibited at the World's Fair.

To Mr. Thomas Bell, of Westchester, much praise is due for zeal and care in presenting fine specimens of wheat from this State. To General Rawson Harmon, of Western New-York, this Society has often been indebted for his careful attention to the cultivation and production of many excellent varieties of wheat. To each of you, gentlemen, the Society presents a Gold Medal, in commemoration of services calculated to extend a better knowledge of our much loved State and increase the means of comfort to man. To Mr. Wm. Hotchkiss, the Society is also indebted for his attention to this important division of our agricultural cares. To you, sir, the Society has the pleasure to present its Silver Medal, in consideration also of the honorable mention of the wheat exhibited by you at the Industrial Exhibition.

Though wheat is characterized as the most nutritious food for man in all quarters of the world, yet the Indian corn crop of the United States is not second in value to any product of the earth, cultivated in the Middle and Eastern States of our nation; nay, even in the rich cotton growing States, Indian corn is fast rising in importance, and will soon equal in value that important commercial product. This indigenous grain yields to the nation an annual average amount of *five hundred millions* of bushels; and has, within the last five years, attracted much attention as a life-sustaining food, more particularly at the period of Ireland's severe suffering, in 1847 and following years. Nations, as well as statesmen and farmers, have found it an object worthy of their consideration and esteem. Among the objects of interest exhibited as adapted as human food, were thirty-four varieties of Indian corn, presented by Mr. B. B. Kirtland, of Cantonment Farm, in Greenbush—an exhibition far more important, of greater value and true interest, than the famed diamond, (Koh-i-Noor,) or all the jewels of every European crown. To you, sir, (Mr. Kirtland,) the Society presents this Silver Cup, richly merited, not only because of the honor you have received from the Royal Commissioners, but also for your unwearied zeal as a member of the State Agricultural Society; though unconnected with the matter before us, I cannot resist this latter allusion.

Among the various products which received honorable mention from the judges in London were specimens of flax and hemp, presented by Mr. E. R. Dix, of Oneida. Both are objects of interest and importance to some of the States of the Union. Recent discoveries in the art of reducing the vegetable fiber to a condition for easy manufacture, have drawn additional interest to these substances. Believing, as I do, that the soil of this State is to be better and more profitably employed in the production of vegetable matter more congenial to its elements and climatic influences, it will probably happen that the valuable and highly important recent discoveries will carry wealth and honor to more western regions, while our expert manufacturers will derive from them no less important advantages. To you, sir, (Mr. E. R. Dix,) the Society presents its Silver Medal, and rejoices in your successful efforts.

It must be within the recollection of many when a concert of *musical instruments* was rare; when song was only known by a simple ballad in sweet melody; when the attempt to execute a concerto was fatal to the character of the composer, whether it was Haydn, Mozart, or Rossini; the very attempt was barborous, and the result was murderous. The ill proportioned harpsichord, no longer seen, the tinkling spinnett, or the imperfect, small square piano, were the instruments, with few exceptions, in the saloons of the wealthy, and in the parlors of those who aimed at the luxuries and refinements of life. They were costly luxuries; too costly to admit the application of perfected talent.

How changed our condition! Years have vanished like moments; for now, from the gilded halls of city wealth and rich refinement to the wilderness where yet prowls the wolf, sweet sounds are heard; Europe's best talent and most gifted powers seek eagerly our shores, and find a welcome amid admiring millions—all conversant with song; many, very many, adepts in the science of sound and of harmony. In our cities, villages, and hamlets, all do honor alike the precious gift. Again and again it has happened, as the Western traveller threaded his almost pathless track amid the forests—mile after mile adding weariness to fatigue—hour after hour, nay, whole days, wasting away without the cheer of a human voice—suddenly, when even hope had become faint, he descried in the shadows of evening the dingy form of a rude log cabin: his ears were startled by well executed passages from pages of classic music, and the sweet cadences of perfect melody. From North to South, from the Atlantic to the Pacific, the charms and delights of music are discoverable.

But yet another extraordinary change has recently occurred; Mr. J. Pirsson, of New-York, presented for exhibition a piano at the World's Fair, made in this country, made by native hands; this piano was offered in competition with the science, and ages of experience, in the Old World; the pupils of a few years' growth vieing with pupils in the home of science! To you, sir, (Mr Pirsson,) the Society gladly awards a Silver Medal, for the skill and talent whereby an instrument of American manufacture has drawn forth the honorable mention of the British Commissioners of the Crystal Palace.

And now we turn from thoughts, soothing and pleasurable, to an object—important, 'tis true—an object, foreign to the eye of most who are here present; an object, the sight of which carries a chill to the heart, beating back the warm blood; an object, which I have no ability to treat with the encomium due to its merits.

It has been said that the medical profession is "a melancholy attendance on misery;" and again, with more truth, that "the educated physician is ever great in liberality, dignified in sentiment, prompt in beneficence, ready to exert a lucrative art where no hope of gain exists." So far as our individual experience is a test, this declaration is doubtless true in all its force; and we may add, that the best sympathies of nature are his daily attendants, often performing an effective share of relief, where knowledge and art have ceased their aid. There is, however, another class of men alive to human woe, whose skill in mechanism entitles them to rank among the benefactors of their race, and, by the happy application of that skill, pointing to a position having a connecting link with those men (physicians and surgeons) whose habits lead pre-eminently to the indulgence of deep and comprehensive thought.

These remarks, thus connected, are brought to the mind by the award of a Prize Medal by the Royal Commissioners of the World's Fair to our countryman, Mr. B. F. Palmer, for *an artificial limb*—a work of art, approaching, as I am informed, a symmetry of form equal to the models of ancient or modern sculpture; possessing, as a mechanism, a beauty of action and a finish hitherto unapproached, and, as an object of utility, to be appreciated as it deserves only by those who need the aid of this ingenious work.

It is stated that four hundred persons have found ease, comfort, and power of exertion by this invention—a number so limited as to distinguish Mr. Palmer for the liberality and beneficence which have been described as among the happy attributes of educated men; the love of gain can hardly exist where the means of so great benefits are within so small a circle.

To you, Mr. Palmer, we have the satisfaction of presenting the Gold Medal of this Society as a testimony of your skill, and your benevolence to man—for their successful application in alleviating misfortune, and restoring comfort and usefulness to suffering humanity.

Among objects not likely to attract the eye, there rested a pile of blocks in the American department, unattractive except to the man of science and the educated mechanic; they were specimens of American Woods—blocks of American forest trees, selected on the Pelham estate, in Ulster county, the highly cultivated residence of Mr. Robert Livingston Pell. It has been said that, of all the productions of the earth, *wheat* is the most important for the sustenance of man; and here we may add, that of all the vegetable productions, the various woods of the forest are no less important and essential for man's uses and purposes. The consumption of our forests exceeds probably the limit of all present estimates. Their value seems to be appreciated by few; yet they are well known to the naturalist, and to those who inhabit the regions of peculiar products. In all ages man has been pleased with the bright or strongly contrasted colored woods; the temple at Jerusalem was covered with cedar, the palaces of Europe are ornamented with strong-grained oak, the residences of our people are beautified with the maple, the walnut and the oak of our forests, as well as the mahogany, the sandal wood, the rosewood, and others of foreign climes. A single instance of the value of wood, for man's pleasure, will not fail to obtain attention; I allude to the sale of three logs of mahogany, some years ago, to the Messrs. Broadwoods, of London. These logs were fifteen feet long, by three feet thick—to possess which, the Broadwoods paid the sum ot three thousand pounds sterling, or about fifteen thousand dollars. Well may the too rapid destruction of our forests demand more careful consideration, to arrest the seeming wanton destruction and waste of millions in amount of valuable property; the day is approaching when the waste of wood may be felt as a national concern. The specimens presented by Mr. Pell were seen, examined, and appreciated by many persons from the European continent; and, as an illustration of the interest produced, it may be stated, that a gentleman of France, connected, I believe, with the delegation from that country, came from the Exhibition to this country for the purpose of visiting Mr. Pell, and to purchase the collection of specimens then in the Palace. Others, however, had previously applied for them, and Mr. Pell had presented them to the Royal Commissioners. In these specimens of our forest woods we have another instance of characteristic *utility*, as applicable to the American department. To Mr. Pell are we indebted for opening more widely the door to a knowledge of our forests; and I feel, sir, (to Mr. Pell) much pleasure in presenting to you, on behalf of the New-York State Agricultural Society, their Silver Medal, as an additional token of merit to the honorable mention of your woods transmitted to you from the Royal Commissioners of the Industrial Exhibition.

In the departments of mechanics and machinery, our State has much cause for satisfaction. Ingenuity and expertness are almost proverbially connected with the American mechanic and artizan; and though but few specimens were sent from this country to the Great Fair, yet of and among the few was Lerow & Blodget's sewing machine—a machine which obtained one of the Prize Medals. The saving of labor effected by this ingenious mechanism may be comprehended, when it is known, that ten trowsers can be made or six coats may be sewed together, by this machine in one day, under the guidance of a young girl; and I am informed, that a factory in New-York turns out *three hundred* trowsers per day, well made in all respects. To you, gentlemen, (Lerow & Blodget,) the Society now presents its Golden Medal, congratulating you upon your successful ingenuity.

The accuracy and excellence of Tools, made in this State, have attracted admiration. All who attended the late Fair at Rochester will remember the display of edged and other tools by D. R. Barton & Co., and W. W. Bryan, of Rochester, and by L & J. White, of Buffalo; but American ingenuity, in this department, seemed most conspicuous at the World's Fair, in the varied forms and excellence of Agricultural tools and implements. These were exhibited in an extensive variety by Messrs. A. B. Allen &

Co., of New-York, and their merit was acknowledged by an honorable mention of their valuable display. The perfect construction of agricultural tools comes closely home to the farmer's sympathy; for, though toil is not unpleasant, and his labors are ever beginning and never ending, he hails with joy every advance or improvement presented by the ingenious mechanic, in the hope that the high value of labor may not hereafter demand so large a share of his hard earned income.* The neat and light, as well as accurately made tools and implements presented by the Messrs. Allen, did not fail to meet the approbation of many, and to obtain from the Judges of the Exhibition their honorable mention; in further commemoration of the event, I have the pleasure to present to them the Silver Medal of the New-York State Agricultural Society.

Among all the implements known and prized by the farmer, the Plow is the chief; it is the only implement by means of which a thorough farm tillage can be accomplished. Without it, the merchant's occupation would be of little comparative worth, the artist would sigh for patronage, science would languish, and man be compelled to forego much of the comfort, luxury, and enjoyment he now commands. But fifty years ago the plow, like other implements, was a rough, imperfect tool;† hard, indeed, was the plowman's task, at best his work was of little worth. Within twenty years this implement has been brought to great perfection; it is now moulded and shaped to meet our almost every need, to perfect tillage for every want. We may not doubt that further improvements will soon be made; yet, when we examine the plow made by Prouty & Mears, Boston, it seems bold to challenge improvement. The admirable work performed with this plow by American farmers has satisfied every wish, and the Prize Medal which it has secured in Great Britain presents the strongest proof of its estimation in that country.

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* *In this State*, the farm laborer receives about 25 to 27 per cent. of the income of the farm. In Great Britain, he receives about 21 6-100 per cent. of the value of the products.

† Antique plows may be seen in the Agricultural Rooms.

To Messrs. Prouty & Mears, I have the pleasure to present this Gold Medal, on behalf of the New-York State Agricultural Society, and to assure you of the satisfaction felt in the success which has attended the efforts of your skill and ingenuity.

During a long series of years the farmers of Europe, and more especially of Great Britain, and their skillful mechanics, have diligently applied their inventive powers to the construction of a Machine for Reaping Grain. The fickle climate of the British Isles has ever kept the minds of their husbandmen vibrating between fear and hope through the seasons of harvest; a machine, therefore, to save time and labor in reaping, has been anxiously sought to displace the *sickle*, which to this day is in general use except perhaps in Berwickshire and a few other localities, where an ill-contrived scythe and demi-cradle have been used. In 1851, Mr. Smith, of Deanstone, made an abortive attempt at construction; he was followed by Mr. P. Bell, who was also unsuccessful; others followed, from year to year, with no better results. In this country, Wilson's machine was for a short time used on the banks of the Hudson river, but gave way, in 1836, to Hussey's admirable, simple, and durable reaper—a machine now extensively used in this and in other States. In 1843* Mr. McCORMICK, perfected his now popular machine, which, at the Industrial Exhibition, in London, has obtained the approbation of agriculturists, who tested its powers and properties under many adverse circumstances, and yielded to it their admiration and prompt adoption.

To Mr. McCormick has been awarded one of the highest honors granted by the Royal Commissioners of the Great Fair—the Council Medal. It is an honor, sir, (Mr. McCormick,) of which you may be justly proud; for your skill and talent have given to the world an implement or machine of rare utility, contributing largely to the general character of most American objects presented for the world's examination; its character of usefulness to man directly aiding in the supply of sustenance at a reduced cost, and indirectly increasing his comforts and welfare.

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* Mr. Cormick claims the date of his invention in 1831. *Vide* Minor's Mechanics' Mag. 1834.

The executive board of the New-York State Agricultural Society, and every member of the Association, must experience pleasure of no ordinary degree in witnessing the expert application of the mechanic arts, their properties and powers, to objects closely allied to the high calling of the farmer; they rejoice in your success, and hail it, together with other important and successful objects now presented here for their commendation and reward, as a proof that the bright dawn of knowledge is darting its rays over this agricultural nation. As an evidence of their satisfaction, and on their behalf, I present to you the Gold Medal of the Society.

The advance of science has recently brought to our knowledge the preparation and use of an article not only important as food, but also essential in the arts. We have had occasion to mention the high value of the Indian corn, and we might with advantage allude to many of its uses and properties; at present we must confine our remarks to a *new* product from this valuable grain, known as Corn Starch, and yet another, as the Fecula of Maize. It was in the winter of 1849-'50 that Mr. Willard and his associates, of Auburn, established extensive works at Oswego for the preparation of these important products—an establishment covering an area of 49,000 square feet. As the proprietors have to some extent held unrevealed the process by which they produce a *starch* more pure than the starch of commerce, we may not indulge in speculative curiosity; yet we can hardly doubt their great success is mainly attributable to perfect machinery, guided by science and talent.[*] The rapid and extended demand for these new products presents sufficient evidence of their character; as we are told that about three millions of pounds of this corn starch are demanded annually by the trade, notwithstanding the usual supply of wheat starch is undiminished. A remarkable feature of corn starch is the absence of impurities; upon being subjected to analysis, it is found that only $2\frac{76}{100}$ parts in 1000 are of other matter than pure starch. According to Ure, wheat yields only thirty-five to forty per cent. of good starch, a material extensively used in arts and manufactures.

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[*] Messrs. T. Kingford & Son have the entire charge of the preparation and manufacture of the articles from the Oswego Starch Factory.

In addition to starch, the Oswego Starch Factory produces from Indian corn a fecula peculiarly adapted to culinary purposes, presenting to our domestic economy one of the most acceptable, pure, and nutritious articles of food. Already has it become an indispensable household article, and is consumed largely at home and abroad. The factory though in its infancy, consumes annually 150,000 bushels of corn, equal to about nine millions of pounds in weight. Hitherto, the quantities of starch used for laundry purposes and in our manufactories have been produced from costly wheats; though it may be found in many vegetable substances, such as potatoes, the horse chestnut, and other seeds. In England, where breadstuffs, particularly wheat, have been raised in quantities inadequate to the demand for food, attempts have been made to convert the viscid matter of *lichens* into a gum for the use of calico printers, paper makers, ink makers—for the stiffening of silks, crapes, and the endless variety of dry goods, which, by means of these gums or starch, are made to appear of greater consistency. Most of these attempts had partial success; yet the making of starch from wheat has not been arrested.

The Oswego Starch Factory has happily introduced the use of Indian corn, as a grain producing a larger proportion of pure amylaceous properties than any other known vegetable substance; proffering to the American manufacturer another economic advantage, sustaining in a most legitimate manner sound rivalry and competition with all the world.

I am not aware whether the Oswego Factory has converted its starch into gum—a process easily accomplished by heat, and thus rendered soluble in water, which cannot be done while in its condition of starch. Here is another result of vast importance derivable from our Indian corn; and we can well conceive that, in a short period of time, the advantages now derived from the production of *corn starch* may grow into a national benefit.

To Dr. Willard and his associates of the Oswego Starch Factory we feel unfeigned pleasure in the presentation of this Golden Medal, for the merit of perfecting an establishment of so great importance as the Oswego Starch Factory, and for the credit conferred on your State by deserving and obtaining the Prize Medal from the Commissioners and Judges of the Industrial Exhibition. We feel, sir, an equal degree of satisfaction in presenting this Silver Medal to your association, in testimony of our estimation of your second product, the fecula of maize, for which you received honorable mention from the Judges of the World's Fair.

Gentlemen,—For many ages man depended more on physical force, and less upon knowledge. They knew but little of the properties of matter or of the laws which govern motion. Industry was inculcated, force was encouraged, patience coveted, and, with these attributes, he effected his desires—desires necessarily restricted and demanding much self-denial, because these attributes, could never accomplish the frequent repetition of his wishes. In this our day, knowledge excites to experiment, and art, springing from science, new wants; these wants acting upon our inventive genius give the means for supply; thus, like the reciprocating action of a perfect machine, the power and effect are in due proportion. Increasing or accumulating results are ever creating a necessity for power—for a greater supply to meet a greater demand.

If an opinion may be hazarded thus early as to the effects of the Industrial Exhibition, seen at this distance, it may not, as before intimated, be as favorable to the progress of man's happiness as has been fondly anticipated by many; because art has been stimulated *chiefly* in the production of articles which minister to luxury, to ornament, and to the non-essentials of truth and virtue in a people; and excess of luxury has never failed to bring distress upon the earth, upon nations as well as individuals. The remark is true, that "as the mind is enlightened it becomes more dignified;" but, if the mind submits to the enervating influences of ease and luxury, its vigor fails—its powers become latent.

In connection with these observations, we may notice the character of nations, as displayed in their respective offerings at the World's Fair. True, the highest effort of mind was there; the vigor of British intellect was conspicuous—European skill displayed the most surprising efforts of ingenuity—an Asiatic art secured the attention of admiring crowds. Our countrymen, in plain and simple forms, presented offerings whereby man should be sustained and his every essential want gratified; while no unnecessary or enervating appetite or desire was kindled, encouraged, or gratified. The unalloyed happiness of the human family seemed to be the aim of American effort—nearly all, possessing a magic influence, leading by their powers to wealth, fame, and honor. It may be said also that the offerings from the United States exhibited a *combination of theory* and *practice*, proving (with few exceptions) that science and experiment go hand in hand; repressing the bold presumption of mere enthusiasts, who would direct all things by their crude, abstract, and ill digested notions.

As the "end of all science is to enrich human life with *useful* inventions and arts,"* we have reason to rejoice in the skill of our fellow citizens, as recently displayed and rewarded in Great Britain; we have reason to rejoice in the advance of knowledge in our happy and favored land. While thus rejoicing, let us not expose ourselves to the errors of self sufficiency and arrogance; let us ever bear in mind that whatever talent we possess, whatever power or influence we wield, they are trusts committed to us—their number and importance being evidence of confidence reposed in the possessor, and of the high hopes and expectations looked for in return. We all have a duty to perform—none beyond our respective powers—for that duty is in proportion to the talent each may hold; to perform our respective duties, we have been commanded and most affectionately invited. If we neglect it, a rigid accountability awaits us; if we obey, who can recount the high rewards of that obedience?

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* Bacon.

At the conclusion of the address by the President, Mr. Johnson, on behalf of Mr. McCormick, tendered his thanks for the Medal presented. He remarked, that few, probably, were aware of the difficulties which attended the American Exhibition at the World's Fair. At the opening of the exhibition and until the trial of the implements, the contributions from this country received but little attention from the public; but a time arrived when justice was done them. The Grain Reapers were tried—a large number had assembled, anxious for the trial, deeply interested in the result. One machine was tried and failed; Mr. McCormick's was then tried, and its success was triumphant, and the hearty English cheers that were given, showed that the Englishmen were truly rejoiced that a contribution from America was received through the exhibition, that "would cut down all the grain in England." To Mr. McCormick, the country is greatly indebted for this triumphant result, which opened up a new state of things, which continued until the final close of this great gathering of the world.

Hon. Mr. Underwood, of the Assembly, on behalf of the Oswego Starch Factory, remarked:

Mr. President—Through you, sir, the Oswego Starch Company receive with pride, from the Judges of the World's Great Fair, recently held in London, this gold medal, as gratifying evidence of the worth and quality of its starch, when compared with that of the other civilized countries of the earth. Among the numerous prize awards which American ingenuity, science and skill justly demanded from the impartial Judges of that great exhibition, this one is not the least valuable and significant. And why, sir, why? Because it is an acknowledgment on the part not only of Great Britain—we have had her confession to that effect twice before—but also on the part of all other nations in the old world combined, that they are unable to "take the starch out of us."

On behalf of Mr. A. B. Allen & Co., Mr. Solon Robinson, of New-York, expressed the thanks of the firm for this honorable mention and Medal awarded. And further to illustrate that they were somewhat entitled to this consideration, he would state that the expense incurred in preparing and sending over the articles was nearly as much as the invoice price of the implements sent over. They were abundantly compensated, however, in the result.

Mr. Johnson, on behalf of Messrs. Prouty & Mears, expressed their thanks for the honor conferred upon them, in the award which had been made to their plow.

Mr. B. B. Kirtland acknowledged in very appropriate terms, the compliment which had been paid to him by the Society, in the presentation of the Silver Cup awarded him.

Prof. J. P. Norton, of the University of Albany, was then introduced by the President, and delivered the following address, on the connection of Science with Practical Agriculture.

CONNECTION OF SCIENCE WITH AGRICULTURE.

ADDRESS

By JOHN P. NORTON, A. M., **Professor of Agricultural Chemistry in Yale College, Conn., and in the University at Albany.**

Mr. President, and Gentlemen
of the New-York State Agricultural Society:

It is now three years since I first had the pleasure and the honor of addressing you, on subjects connected with Scientific Agriculture. I labored then under the pressure of many difficulties, obstacles and prejudices, which have since, at least so far as this State is concerned, in a great measure disappeared. The feeling of distrust at scientific innovations has in a remarkable degree vanished; a thirst for information has sprung up, and though crude imperfect conceptions as to what is needed are still prevalent, the great current of public sentiment may in the State of New-York, at least, be said to have fairly turned. The demand is now for light, for books, for schools, for lectures and agricultural colleges. I have had occasion to witness during the past, and the preceding year, in several counties of the State, the strong interest with which its farmers greet every opening that promises to throw light upon any department of their business. That this interest is still increasing, there can be no doubt.

Your Society within these three years, has successively taken a higher and higher stand, until it now, more distinctly than ever before, stands at the head of all State Societies in the Union; approaching almost the rank and importance of a *national* Society. It is looked up to by all others as a guide and model which they desire to follow, its movements are awaited with the strongest interest; its shows call a greater concourse, and from a wider range, than do any others, not excluding even those of the great British Societies. Your power and influence have increased, until the station which you now hold is one of vast importance. Those who guide the operations, and mark out the path of this Society, from year to year, have a weight of responsibility resting upon them which should be well understood. Your move is in fact, more and more the move of the United States, and you by your action may weaken or strengthen in a most extraordinary degree, the true friends of science, even to the remotest sections of the Union. It is then with a sense of your position and influence as a Society, that I appear before you this evening. I see around me those who represent the strength of this great association, those who take the lead in its councils, those who have worthily and most profitably spent the full maturity of mental and physical life in its advance and improvement; who have labored not for fee or reward, but from the truest and most patriotic sense of duty. In such a presence I would speak with deference, but yet with frankness, would express my own opinions freely, but not dictatorially. As upon the previous occasion in this hall, I would speak of the connections of science with agriculture, but in a somewhat different view. I then endeavored solely to show that those connections were of a useful character, but now I desire to go a step farther; to speak not only of their usefulness, but of their absolute necessity, and to urge upon you the importance of doing something which shall give a direction and tone to public sentiment. This you have the power, and I doubt not the will to do, if once the way seems plain. A commendable prudence has hitherto marked the movements of the Society in this direction, yet without overstepping prudential limits, we may in the present state of opinion, examine boldly the foundation on which we stand, and seek material for the first courses at least, of the edifice which we propose to erect.

The public mind seems, in this State certainly, to have at least become fully awakened, and to be imbued with the very spirit of progress. Many things which were once dark and uncertain, have now become clear and well defined; many advances, the utility of which once seemed a doubtful question, have met with assured and triumphant success; the best farmers of to-day, see that within a short period the practice and opinions of yesterday, have been modified at least, and in many cases have passed away. You have in short, gentlemen, by your well directed efforts, raised a spirit, which like the ghost of Banquo, will not down, but will haunt you day by day, and year by year, until it obtains all it requires. This spirit is the thirst for information; the farmers of New-York have become convinced that they need knowledge with regard to their profession, and even if you were so disposed, you cannot now drive this idea out of their heads, nor the desire for progress which it encourages and feeds. You have entered upon a life-long task which will be transferred as an inheritance to those who come after us, and which will continue so long as man cultivates the face of this earth, until He who created sees fit to destroy.

This desire to improve, this effort to learn something beyond the ordinary operations of farm life, though general as I have said, is still with the great mass of our population somewhat vague and indefinite; one man thinks that such and such facilities would lead to all that he wants, and turns his hopes in an entirely different direction; one proposes a plan to-day which another pulls in pieces to-morrow; and if you will allow me to speak plainly, I will say that many of our farmers do not know what they really want; it is an uneasy sense of discontent that they feel; a sincere longing after something better, but which from its very indefiniteness has hitherto, in a degree at least, failed to accomplish what it might and ought to have done. Even where direct practical efforts have been made, they have often failed, and more often still their results have been rendered practically useless for want of a proper understanding of some simple scientific truths. Suffer me to illustrate my meaning more fully by reference to one or two points; my remarks upon which will not only tend to show that I am right in these conclusions, but may also, perhaps, find their parallels in the personal experience of some here present.

There is no department of scientific agriculture where a greater lack of precise and definite information is shown than in that of chemistry. This is partly the fault of enthusiastic writers on the subject, partly the result of imperfect teaching by those who are themselves not sufficiently familiar with the science which they are supposed to understand. I wish that upon this subject I could make myself heard and comprehended by every enlightened farmer in the United States; for all my observation and experience have led me to the conclusion that here is one of the most fertile, if not *the* most fertile, source of injury to the general cause of improved agriculture. It has been and still is believed by many farmers that this whole subject of chemistry is, to the initiated, as clear as noonday, and that the process of initiation is a simple and by no means lengthy one. The general idea seems to be, that in about the time that a young man can learn to shovel earth dexterously into a cart, he may also become capable of analysing a soil. You all know that a man cannot become a first rate plowman in one, or even two seasons; that those who take the highest rank must make it almost their business; but the mysteries of chemistry may be conquered in a few weeks, and a soil, after going through some mechanical process, just as certain to come out right as grain is to come out clean from a well constructed fanning mill. Gentlemen, this is a great and fatal mistake; I do not blame the farmers for it, but those scientific men, who, from interested or sincerely mistaken motives, have inculcated such views. That you may not think me extravagant, allow me, at the risk of being considered somewhat egotistical, to bring myself forward as an instance: I stand here to-night as a professed agricultural chemist; for the last seven years this has been, including, of course, other necessary connections of science with agriculture, my sole subject of study. The exceptions have been so few as to allow me to say that I have written upon nothing else, have worked upon nothing else, have studied nothing else. In this pursuit, too, I have, according to my own estimation, at least, been diligent, and may, perhaps without question, claim to have acquired as much as the average of students would have done in the same time. Seven years then have been devoted almost exclusively to this study, and now at the expiration of that time you would be surprised if you could know my own real estimate of the knowledge gained in comparison with that which is yet to me a sealed book. This is no parade of false humility—no trick to call forth praise—it is perfectly sincere. The words of Newton must come up vividly to all who venture into the fields of science and begin to comprehend how vast and illimitable they are—how circumscribed the extent of our acquisitions in comparison with what lies beyond.

I say to you frankly, that when you meet with a man who makes all of these things easy, who pronounces with entire confidence upon every theoretical point, who reads his analysis of your soil, or plant, as you would read a book, *distrust* that man, for he is either intentionally imposing upon you, or he thinks he knows what he *does not*.

Did those who doubt this, ever seriously consider what the analysis of a soil, and the subsequent pronunciation of its defects or excesses in composition require? In the first place, the analysis itself is a matter of more difficulty than is generally supposed. The determination of the mineral substances in their exact quantities is a matter involving a necessity of somewhat extended experience. There are some among them respecting which we are even yet at fault. The most troublesome of these is phosphoric acid, a body with the name of which, at least you are all familiar, as of most importance to the farmer. It is somewhat difficult to separate phosphoric acid from its combinations so as to arrive at its precise quantity, and this is particularly the case when it is combined with several substances at once. Now, in the soil it is usually combined with iron, alumina, lime, and magnesia, just the worst set of companions, for the chemist's purpose, that it could have chosen, as it is next to impossible to separate it from these accurately. Within the last few months a method has been devised, which seems likely to overcome this difficulty, but previous to that, I do not hesitate to say that we had no method which was strictly accurate, as applied to soil analyses. I firmly believe that a guess, by means of certain tests, would have come as close to the reality as are many analyses that have been published. This is a specimen of the difficulties in one direction. If we turn to the organic or vegetable part of the soil we find ourselves at once involved in a maze or labyrinth of the most complicated description. Certain general and highly valuable principles have been established, but our knowledge of the strictly *accurate* analysis of this part is comparatively limited. We really are quite uncertain as to the true character and composition of humus, ulmic, geic, crenic and apocrenic acids, of which so much has been written; and I must confess that in the present state of our information I am disposed to attach little importance to any determination of them. But supposing all these obstacles were safely overcome, that all which exists in every part of the soil were safely and accurately determined and expressed by a long row of figures, have we arrived at the end of our difficulties? by no means. We have now to consider what these figures mean with reference to the soil in its present state, and to the crops which grow upon it. In the first place, have we here a fair sample of the field; if this be so we must ask, what has the physical character of the soil to do with the results of cultivation?—is it wet or dry, stiff or light, mellow or tough, uneven and broken, or smooth?—has it been cultivated properly, subsoiled, trenched, drained? and what is the character of its subsoil? Then, too, we must know what crops have prevailed, or what course of tillage has been adopted, and, as a necessary consequence, the composition or character of the manures employed? Are not here a variety of subjects for inquiry; and are they not subjects whose satisfactory disposal would involve a great amount of study and perseverance. If there is no exaggeration here, (and I assure you there is not,) is not the *complete* analysis of a soil a matter involving much of difficulty, and something not to be undertaken after a few weeks' of preliminary practice? There is in fact room for the exercise of far more knowledge than we possess, or than any one possesses. I do not mean to say that the examination of all soils is attended with these numerous obstacles, for there are many cases where a decision may be made easily and promptly; but there are others presenting questions which our present chemical science is incompetent to solve. I am a firm believer in the efficacy of soil analyses, but at the same time must acknowledge that our information in this department is still far short of what it should be. My own opinions upon their results are always given with hesitation and with qualifications, and each year makes me more cautious instead of bolder, more inclined to believe that our reading of nature's laws is still imperfect.

There are at this moment some of the most celebrated European chemists who argue that our present system of soil analysis is founded upon wrong principles and is almost worthless. Their views may be successfully opposed by the results of practice alone, yet the very fact of their being entertained in such quarters, shows that there is much of obscurity and uncertainty yet hanging about the subject.

Let the farmers of this State, then, insist on having persons who are properly qualified in this respect; do not encourage your young men who are practical farmers to indulge the idea of becoming chemists, or thoroughly scientific men. There is much in the way of science that they may most profitably study and practice upon, but they cannot usefully or advantageously go beyond the more elementary departments; he who cherishes the desire to do more than this, (and I would encourage every one who does,) must make chemistry his chief pursuit for a long period of time and under good advantages for instruction.

I hope that the need of science and the need of information in this department has now been made clear. The subject was selected as one of much interest to all of our more intelligent farmers. There is yet another, upon which I will touch as among the necessities of our agriculture, and this is, the importance of satisfactory and accurate practical and experimental investigation. Those who have noticed the course of the public mind upon the subject of agriculture for the past few years, must have observed the tendency to experiment that has rapidly developed itself. As the conviction spreads that something is wrong, so does the desire to aid in making that wrong right, and the consequence is that we have been fairly inundated with records of practical experiments. What has resulted from the vast numbers of these experiments that have been zealously, and supposed to be carefully, made? Have we had any great principles brought out, any points established at all commensurate with the real expenditure of time and money involved? The records of most private and unassisted comparative experiments are extremely imperfect, and in many cases where both have evidently been conducted with a desire to arrive at the truth, they flatly contradict each other. We see in our agricultural papers endless controversies between good practical farmers, each of whom is fortified with his cases, and each of whom holds to his own belief with untiring tenacity, and with the most perfect good faith. Now, the difficulty in almost all of these cases is, that the experimenter has not sufficiently understood the nature of the materials with which he worked, or the various incidental circumstances which he ought to have taken into consideration.

Suppose A and B to be making experiments upon some particular crop in different counties, or to make the case even stronger, in different parts of the same town. It not very unfrequently happens, that fields or farms at trifling distances apart, have soils varying greatly in their character. A and B however, are not aware of this difference, or disregard it, and the consequence is a mysterious disagreement in their experiments, to the cause of which, the reader of their statement has no clue whatever. If we go a step farther, and suppose their soils to be very nearly alike, we still find new and abundant sources of discrepancy. One farm may be a little more elevated than the other, and the climate, therefore, somewhat different, it may be wetter, or the general cultivation may have been differently managed; these are all fertile and usually hidden sources of disagreement But if by some remarkable chance, for it is obvious that in view of the above neglected precautions, it it could be nothing more than a chance, these two experiments should agree; have they established any rule for the benefit and guidance of those who live in other sections? none whatever. They have given no analysis of their soils, no reliable data as to the character of the climate, of the particular season or seasons in which they experimented, of changes in temperature, of variations in different seasons, or as to many other points, all of which are important, and any one of which may have had a controlling influence in success or failure, as it is recorded in the report. The third person, then, without due knowledge of the points to which the others may possibly have attended, follows their directions, such as they are, and very probably under different circumstances produces quite different results, and so it goes all over the country. The practical men who hear me, know this to be the case, they are many of them, doubtless, able to call to memory cases of misdirected and useless energy in experimenting, which under proper guidance might have produced important effects. In addition to these sources of imperfection, I may also mention carelessness, and forgetfulness. The constant occupation of time in the daily affairs of the farm, in the absence of any definite rules, leads directly to a gradual cessation of watchfulness and care. In the latter part of the season, when the first excitement of novelty is over, this is particularly apt to be the case, and a few hours of neglect may ruin all the season's efforts at discovery.

In view of this state of things, I maintain that the only hopeful way of advancing knowledge by means of experiment, is to be found in the establishment of certain definite rules, for the strict guidance of all experimenters. Meteorological, and other scientific observations, are conducted year after year in perfect concert over the whole world, by independent observers stationed at fixed points. These observers act in accordance with positive rules, and instructions, furnished them, and any deviation at once throws discredit upon all of the offender's results. In this way are procured whole volumes of valuable material, which when condensed and compared, often produces discoveries of the highest character, and reveals practical truths of the most valuable nature. Would not a wide spread Union of this nature, among our most intelligent and cultivated farmers, be conducive to the advancement of agricultural science. Suppose they all acted in accordance with instructions from some central point, bringing into view as these instructions would lead them to do, all incidental circumstances of climate, soil and situation; what remarkable results might we not expect from such a united effort, even among the farmers of this State alone. It would all to a certain extent become a great experimental farm. We should have all climates, soils, exposures, and peculiarities of location, before us at a glance. There might also be a central experimental farm, for the making of strictly scientific experiments, for the training up of new observers, for the central point to which all other results should be sent, there to be made most speedily intelligible and practically valuable. It has appeared to me that such a scheme, properly carried out in all of its details, might prove eminently successful. It is not offered here as more than a partially made out plan, and because a purely *experimental* farm does not interfere with any pet project as to a *model* farm. The two could moreover be connected with most decisive mutual advantages, even under the same general supervision. I might go on for hours, in detailing instances of the peculiar difficulties which in the present state of things, beset the path of every farmer, who commences an earnest course of improvement. How many and how perplexing they are, no one can know who has not had some actual experience, or some rather extensive opportunities of observation. There are so many questions coming up in the progress of every day's practical operations, questions that require study and perseverance to obtain an answer, that many become discouraged at the outset, and fall back into the old state of contentment with things as they are, rather than undergo the mental labor necessary to a change. This disinclination to mental exertion, on points connected with their own business, is a characteristic of many of our farmers. To bodily toil they have no objections, and could scientific agriculture be brought out of the soil by hard knocks and deep plowing, it would have been placed above ground, and hung up for examination, long ago. This disinclination must be overcome, before we can proceed rapidly; the farmer must see and fully appreciate the superior power of the head, as compared with the hand. A man who can neither read nor write may possess the most remarkable dexterity in all the operations of manual labor; he may be a Hercules in strength, an Apollo in form, may be envied and flattered for his mechanical skill, yet after all he has but refined, by the aid of such mental qualities as he posesses, upon the properties and faculties of the mere animal; and the veriest deformed, weak and distorted cripple, who has improved the powers of his mind, will have absolute control and direction over the labors of five hundred like him.

This is a principle which, as it seems to me, should be carefully fixed in the mind of every young farmer: remember that the improvement of the mind should be a great and important object of your life. Pay all due attention to manual labor, no one need be ashamed or afraid of the marks of honest toil, but a man need not for all that insist, as many have done, upon, as it were, rubbing the dirt into his immortal soul, and continuing all his life a mere day laborer. Work as hard and as long as you will, but remember that any uncultivated savage can do the same, and after a little practice almost equally well—your superiority to him is in the cultivation of the intellect, and should you not, in place of shrinking from this and considering it as a disagreeable task, look upon it as your highest privilege? Every item of real knowledge that you can acquire relative to your own business, gained, too, very possibly in a few moments, may be more productive in the way of mere pecuniary gain, than the hardest day or week's work that you ever did. You will find, too, that the applications of knowledge to your profession, are far more practical than you have supposed, and as you proceed, will discover that nearly all of the difficulties which now oppress the farmer may be referred more or less directly to a want of real scientific knowledge. This is true in every department, and in every operation, from the most important, to the most trivial, from the highest to the lowest. In all methods of fertilizing and improving the soil, in rotation and selection of crops, in feeding the animal, in bringing farm products into a condition fit for market, the aid of science is not only important but indispensable to the most advantageous prosecution of agriculture. From the plow to the ripened grain, from the complicities of the animal frame, through all the operations of the dairy, science has followed or led the farmer's steps with advantage. It is true, that at first he sneered at the idea of any aid, except from hands as strong, and a face as sun-burned as his own; but time has only brought out another instance of my position that knowledge is true power, that the hand must be guided by the head. As a body, the people of this State are evidently becoming fully convinced that such is the fact, and are meditating seriously upon the means of improvement that are, or may be brought within their reach. You have already in this State, in the leading members of this Society for example, numerous instances of what perseverance in sagacious and intelligent improvement may do, but after all, individuals scattered here and there over a great community, can make but comparatively slow progress in removing prejudice, and inculcating sound practice. The change in this State has probably been more marked and rapid than any agricultural community ever before witnessed, and yet how much is left to be done. Those who come to your great shows, where so much of enterprise and intelligence is visible, where so many are interested in all that is progressive and valuable, might think that the work was done, that the function of this great and powerful Society was fulfilled; but those of you who look deeper than the surface, know that this is not the true condition of things. That multitude, great as it is, represents but a fraction of your population, and even those who come together there, soon begin to feel how insufficient are now such valuable opportunities, to slake that strong thirst for knowledge which they begin to feel. They want something else, something which will enable them better to appreciate and profit by all these advantages, something which will bring all their floating and detached items of information into compactness and system, which will enable them to proceed steadily and understandingly in the march of improvement; they want in short, a system of education expressly adapted to their necessities.

This may seem to some of you a trite assertion, and it is certainly one that has often been repeated within the past few years, but still until we see some definite and decided action in accordance with its principles, you must make up your minds to hear it again and again. The great difficulty now seems to be, to arrive at anything decisive; there have been so many and such different plans, so many theories of education to satisfy, and so many practical wants to supply, that the result has been uncertainty and delay. Now in my opinion, the time for farther delay has passed by; while we are debating, the State is losing in actual wealth, its young men are growing up in the old habits, and all forms of improvement are but slowly finding their way among us. Public sentiment too is ripe for a change, and it demands such a change more and more loudly, and in my opinion the time has come for action. The question you will ask is, what shall this action be? My own views upon this subject have been formed by several years of experience in teaching agricultural science, and in watching its effects upon the minds of those to whom instruction was communicated. My conclusion has been, that the first point to be aimed at, is the firm establishment of certain great leading principles in the mind of the student. With regard to the applications of chemistry, geology, animal and vegetable physiology, to agriculture, I hold that there are clear and beautiful principles which may be firmly impressed, and perfectly understood, in a comparatively short time, even by a few months course of lectures, provided sufficient pains are taken to connect thorough recitations and examinations with the public exercises. This can be done without expensive machinery of any kind, and should, as I believe, be the first step. I fully agree with the expediency and necessity of also establishing a model and experimental farm, but would let this as requiring more expense, and more preparatory detail, follow and not lead. First impress the principles, and everything else will come in naturally. If certain great leading facts, relative to the management and cultivation of the soil, could be well understood by every farmer in our State, it would increase the value of real estate to an amount that we are at present unable to estimate.

It is in accordance with these views, that the agricultural department, in the University of Albany has commenced operations during the present winter. As the department has already excited attention, and its plan has been commended by some influential members of your society, it may not be improper for me to say a few words relative to it here. This is a private enterprize, founded on account of a strong conviction of its absolute necessity. We commence, this winter, with three months courses, on Scientific and Practical Agriculture, on Geology and Mineralogy, and on Entomology, in its agricultural relations. By another season it is proposed to add courses on the Anatomy and Pathology of Domestic Animals, on Veterinary Surgery, and on the Mechanics of Agriculture. In this way it is designed that we shall gradually enlarge as the wants of the community increase; being untrammelled in any way, and feeling carefully in advance every step of progress, we hope to move forward steadily, surely and as rapidly as the demand for instruction shall increase. We intend no system of endowments, but to rely on our own exertions to secure and retain the patronage that we desire. We propose, however, to establish a system of free scholarships by the aid of the State, or of societies, whereby large numbers of free students may be sent from all parts of the State. Suppose, for instance, that the six courses, which we hope to establish by the next winter, should be attended by two or three young men from each representative district in the State, what an influence might be expected from those young men when they have gone out again into their respective sections. Then, too, with so many at work in accordance with scientific principles, this obscure subject of a model farm will begin to clear up, and we shall, each year, see, more distinctly, what it is that we really want. I would propose to begin with that also, moderately and cautiously, on a small scale, to feel our way and make no mistakes, to add acre by acre, department after dapartment, just as it is needed, and so gradually and safely to grow toward a perfect institution. I would rather begin at the bottom of the ladder and go up, holding on tight at every round, than begin at or near the top, where there would be danger that if I stepped at all it would be downward. I insist, more strongly, upon this matter, for the reason that as one who attempts to teach science, I have found the tendency of practical men toward distrust. If I make one mistake and they catch me in it, they will remember it longer and talk over it more, than twenty instances of success. There is nothing that an old practical farmer will chuckle over with so much satisfaction as the detection of one whom he considers a theorist, in some blunder. In the first class that I taught in New Haven, I discovered, during my recitations, that some of the farmers boys were setting traps for me by asking the reasons for certain practical methods of proceeding. If they could have made me go into a scientific explanation of something which was to be referred to more common place or common sense reasons, they would have been highly satisfied. This is the danger in commencing any agricultural institution. If, in the outset, it makes glaring mistakes, the confidence of the farming community will be shaken, and its return will be slow and unwilling. It is for such reasons that I desire to proceed cautiously.

Now it is necessary to guard ourselves, here, against misconstruction. We do not oppose, in any way, the aims of those who are advocating the establishment of a State School. The subject has been before the community and the Legislature for years, but, no definite practical action has, as yet, been the result. I believe that the people of the State have been, for years, ready to embrace any satisfactory plan that might be presented, but nothing has yet met with their full approbation. I do not know what movements are in contemplation this year, or what success may attend them; but this I know, that, could such an establishment be founded on a proper scale, furnished with competent teachers, and adapted to the wants of our farmers, no one would more heartily hail its success than myself.

My own views I have stated, and those who do not agree with them entirely, may still, consistently, aid in the present enterprise. Even if any bill with reference to a State School should be passed at the present session of the Legislature, the preliminaries of location, selection of teachers, arrangement of buildings, and the thousand details inseparable from the commencement of so great an establishment, would inevitably occupy several years more. In the mean time you will have growing facilities here, such as have never before been offered in this country. You have the opportunity here, by your encouragement and support, as individuals, and as a society, to establish at a comparatively trifling expense, another great agricultural institution. I am not in the habit of boasting, but it is my firm belief, that, with very moderate aid from the State, or from societies, with a fraction of the sums that have been bestowed upon some of your small colleges, five years from this time, will see an Agricultural Department of the University of Albany, that will draw its students from every State in the Union, that will speedily revolutionize the agricultural practice of the Empire State. If, during that period, a great State School can also be established, so much the better. I do not fear hurting farmers by too much of the right kind of education, and two such institutions could co-operate with high mutual advantage.

Your society, gentlemen, is one to which I always turn first, as the body which is to sustain every effort of true science, and I look forward, with increasing hope, to its future development. As it grows and expands, embracing within its field, all departments of science and practice, encouraging every improvement, stimulating every effort of industry, appreciating the true and useful, frowning upon the false and worthless, what may we not expect from it. The character of the farmer in this State and in other states, has already been elevated by your upward movement. New York stands unmistakeably in advance, and, if she will, may retain her proud pre-eminence. To accomplish this, you, her citizens and members of this society, have only to honor in heart and action, the principle of your own motto "Excelsior." Higher must be the aim of every heart, so long as it beats to the breath of life. Obstacles to all progress may and will interpose, but they are made to be overcome; discouragements and delays are to be expected, but with a little patience they will pass away. Perseverance for the present, and hope for the future, will enable us to gradually accomplish what now may seem impossible. No one can estimate, in advance, the increased enjoyment of daily life, the increased self-respect and pride of profession, which true knowledge always imparts, and it is a high and noble office to stand as this society, and this State now does, with the power of throwing the light of scientific education over its whole broad territory, it is even a great thing to be permitted to appear before such a body as this, the advocate of such a cause. The responsibility is great, but the end in view is also great; and we are now acting not for ourselves alone, but for succeeding generations. We are laying the foundations of a new system, almost as distinctly as did our far sighted forefathers, when they placed universal primary education and the Bible side by side, as guiding principles, and objects for the nation that was to people these then desolate and trackless wilds. We are now called upon to take another step in the march of time's changes, and shall we hesitate when once we see the path open before us? It is for the vast majority of our people that we exert our strength; it is on the plowshare and not on the sword that we lay our hand; it is on the side of mental and moral purity and elevation that we labor.

The address was listened to with great interest; and on motion of Judge Cheever, of Saratoga, the thanks of the Society were tendered to Prof. Norton, for his able and eloquent address, and he was requested to furnish a copy for publication in the Transactions of the Society.

Mr. Glover's prepared specimens of Fruits.

Mr. Solon Robinson offered a resolution, that the Society expend —— hundred dollars for a perfect collection of all the fruits and vegetables grown in the State of New-York, to be prepared by Mr. Townend Glover. Mr. Prentice thought that was a matter which should be left with the Executive Committee, and that the Society commend it to the attention of the committee. Mr. P. Barry seconded the motion of Mr. Robinson.

Mr. Johnson suggested it might be proper to refer it to the Executive Committee. He stated that when in attendance at the World's Fair, and while in Europe, he had seen the specimens on exhibition at the Crystal Palace, and when in Paris, those of Mons. Vilmorin, a distinguished cultivator, but none of them were, in his opinion, equal to those prepared by Mr. Glover. His samples display more artistic skill, and are of great value. He trusted that they would be secured for the Museum of the Society, as models for reference hereafter. Mr. Barry corroborated this statement. He thought Mr. Glover had done more than any other man in this art.

After considerable discussion, by Messrs. L. F. Allen, Judge Cheever and L. G. Morris, the Executive Com. were desired to employ Mr. Glover to prepare specimens, to be classified and named by a committee; the Society adjourned to meet at the Agricultural Rooms, at 10 A. M. the 22d.

THURSDAY, 22d.

The Society met at the Agricultural Rooms. The committee made their reports, and the following awards were made:

AWARD OF PREMIUMS.

MANAGEMENT OF FARMS.

1. Premium, N. & E. S. Hayward, Brighton, Monroe county, Silver pitcher, value $50. 2. McCulloch & Kirtland, Cantonment Farm, Greenbush, Rensselaer county, Silver cup, value $30. 3. Albert G. Ford, Fairfield, Herkimer county, (dairy farm,) Silver cup, value $20. Sherman L. Wattles, Sidney Center, Delaware county, 6 vols. Transactions. J. B. Morse, Cazenovia, Madison county, 6 vols. Transactions.

DAIRY BUILDINGS FOR CHEESE DAIRIES.

Moses Eames, Rutland, Jefferson county, $25. Paris Barber, Homer, Cortland county, $25.

EXPERIMENTS IN DRAINING.

1. John Johnston, Seneca county, Silver cup, value $30. 2. T. G. Yeomans, Wayne county, cup, value $20

BUTTER AND CHEESE.

Butter.—1. Israel Denio, Rome, Oneida county, $15. 2. Noah Hitchcock, jr., Homer, Cortland county, $10. 3. L. L. French, Warren, Herkimer county, $5.

FIELD CROPS.

Winter Wheat.—1. Samuel L. Thompson, Setauket, Suffolk county, "Golden Australian," 2 acres, 54½ bushels per acre, $20. 2. Elisha M. Bradley, East Bloomfield, Ontario county, "Soules," 5½ acres, 41¼ bushels per acre, $15. 3. James McCready, 2d, Plattsburgh, Clinton county, "Red Chaff," 2¾ acres, 43 bushels per acre, $5.

Spring Wheat.—1. Charles W. Eells, Westmoreland, Oneida county, "Siberian," 2 acres, 30 bushels, 50 lbs. per acre, $15.

Rye.—1. Elisha W. Bushnell, Hillsdale, Columbia county, 2 acres, 40 bushels, 22 lbs. per acre, $15. S. Foster, Hillsdale, Columbia county, 2 acres, 42 bushels per acre, $15.

Oats.—1. Peter Crispell, jr., Hurley, Ulster county, two 7-100 acres, 81 bushels per acre, $15. 2. H. B. Bartlett, Paris, Oneida county, 2 acres, 74¼ bush. per acre, $10. 3. Elisha W. Bushnell, Hillsdale, Columbia county, 2 acres, 85 bushels 4 quarts per acre, $5.

Indian Corn.—1. Elisha M. Bradley, East Bloomfield, Ontario county, five 55-100 acres, 93 bushels per acre, $20.

BARLEY, BUCKWHEAT, PEAS, AND BEANS.

Barley.—1. Benjamin Enos, De Ruyter, Madison county, 2¼ acres, 52 bush. 4 quarts per acre, $15. 2. E. R. Dix, Vernon Oneida county, 2¾ acres, 44 bush. 20 quarts per acre, $10. 3. William Davidson, Hartwick, Otsego county, 2 2-5 acres, 45 bush. 6 quarts per acre, $5.

Peas.—1. E. S. Salisbury, Ellisburgh, Jefferson county, 41 bushels 8 quarts per acre, $10. 2. L. L. French, Warren, Herkimer county, 1 acre and 50 rods, 41 bushels 16 quarts, $8. 3. E. M. Bradley, East Bloomfield, Ontario county, 44 bush. and 40 lbs. per acre, $5.

Beans.—1. E. S. Salisbury, Ellisburgh, Jefferson county, 1 acre 35 bush. 46 lbs., $10.

Buckwheat.—1. L. L. French, Warren, Herkimer county, 3 acres and 75 rods, 107 bushels 16 quarts, $10. 2. David Conradt, Brunswick, Rensselaer county, 1¼ acres, 28 bushels 7 quarts per acre, $8.

FLAX, TOBACCO, TIMOTHY SEED AND ROOTS.

Flax.—1. Benjamin Aikins, Pittstown, Rensselaer county, $10.

Tobacco.—1. Thomas A. Smith, Syracuse, very fine samples produced, $5.

Timothy Seed.—1. Dow Van Vechten, Mohawk, Montgomery county, 1 acre 22 rods, 9 bush. 8 quarts, $5. 2. O. W. Eells, Westmoreland, Oneida county, 1 acre, 6½ bushels, $3.

Potatoes, as to quality per acre, and *Carrots* were not of the requisite quantity, to entitle the exhibitors to a premium. In the entry for table potatoes, the quality was inferior, as they were mixed, and only a portion of them suitable for table.

GRAIN AND SEEDS.

Spring Wheat.—1. Best 20 bushels, George K. Eells, Kirkland, Oneida county, $8. 2. David Conradt, Brunswick, Rensselaer county, $5.

Barley.—1. Best 20 bushels, William Davison, Hartwick, Otsego county, $5.

Timothy Seed.—1. Best 10 bushels, Charles W. Eells, Westmoreand, Oneida county, $5.

Corn.—1. Best 20 bushels, McCulloch & Kirtland, Cantonment Farm, Greenbush, Rensselaer county, $5. 2. Adam Laborence, Bethlehem, Albany county, $3.

Rye.—1. Best 20 bushels, David Conradt, Brunswick, Rensselaer county, $5.

Oats.—1. Best 20 bushels, J. McD. McIntyre, Albany, 39 lbs per bushel, $5. Messrs. Rapalje & Co., Rochester, for a very superior assortment of seeds, Silver Medal. Messrs. Emery & Co., Albany, a fine collection of seeds, highly commended.

FRUITS.

Apples.—Several Seedlings have been examined by the committee, neither of which are considered as entitled to the premium of the Society. For collections of Fruits, to J. C. Hastings, Clinton, Oneida county; E. C. Goodrich, Burlington, Vt.; H. D. Adams; T. G. Yeomans, Walworth, Wayne county; J. Merritt; Robert Brown; F. W. Lay; David Emory, Ithaca; Peter Slingerland, Bethlehem; William Newcomb, Pittstown; B. B. Kirtland, Greenbush; Samuel Morgan, Albany; P. Barber, Homer; J. H. Watts, Rochester; A. Frost & Co., Rochester; John Donnellan, Greece; D. L. Bailey; Thomas Johnson; and J. C. Campbell, Rochester, "Barry's Fruit Garden." To. R. G. Pardee, Palmyra; J. H. Vandervere, Amsterdam; Wm. Foster, Palmyra; and Joseph Cary, Albany, "Downing's Fruits." To E. B. Lucas, Clinton; Samuel Cary, Albany; D. S. Curtis, Canaan; Samuel Thompson, Aurora; Joel Hall, Marion, "Thomas' Fruits."

The committee have critically examined a collection of Models of Fruits, consisting of apples, pears, plums, nectarines, apricots, cherries, gooseberries, strawberries, nuts, &c.; also a collection of

Insects, prepared by Townend Glover, of Fishkill, which are very superior specimens of art, and of great value, to which is awarded the Gold Medal of the Society.

FAT CATTLE AND SHEEP.

Cattle.—Best fat ox, L. Turner, Geneseo, $\frac{3}{4}$ Durham, descended from Gen. S. Van Rensselaer's first importation, bred by B. Murphy, of Genesee county, $15. 2. B. McNeil, Schoharie, $10.

Best fat steer, B. McNeil, Schoharie, $15. 2. Milton Knickerbocker, Schodack, $10.

Best fat cow, W. A. Mills, Geneseo, $10. 2. W. A. Mills, Geneseo, $5.

Best fat heifer, D. S. Baker, West Bloomfield, Durham, $10. 2. W. A. Mills, Geneseo, Durham and Hereford cross, $5.

Sheep, long wooled.—Best, B. McNeil, Schoharie, $8.

Middle Wooled.—1. J. McD. McIntyre, Albany, South Downs, $8. 2. D. S. Baker, West Bloomfield, $5.

Cross Breed.—1. B. McNeil, Schoharie, $8. 2. D. S. Baker, West Bloomfield, $5.

SPECIAL PREMIUMS.

Swine.—Christian Rapp, Albany, two very superior live hogs, $8.

Cattle.—L. Turner, Geneseo, fat ox, $8. B. McNeil, Schoharie, fat ox, $8. J. D. Ledyard, jr., Cazenovia, fat ox, $8. D. S. Baker, West Bloomfield, white heifer, $8. W. A. Mills, Geneseo, spayed heifer, $5.

Commended, as worthy of special notice.—James M. Hills, Clinton county, a very large ox. Elon Sheldon, Sennett, two oxen. D. S. Baker, West Bloomfield, pair white steers. J. D. Ledyard, jr., Cazenovia, one steer. L. Turner, Geneseo, pair twin steers. Erastus Corning, jr., exhibited a two year old Hereford heifer, a breeding animal, very superior.

CARCASSES AND DRESSED MEATS.

Long wooled Sheep.—1. Patrick Downey, Albany, $5.

Cross breed Sheep.—1. Patrick Downey, Albany, $5.

South Down.—1. Charles Snowden, Albany, $5. 2. Charles Snowden, Albany, $3.

Swine, over 300 *lbs.*—1. E. R. Gove & Son, Watervliet, $5. 2. Herman O'Hara, Scipio, Cayuga county, $3.

Under 300 *lbs.*—1. Richard Gregory, Fleming, $5. 2. Wm. Davison, Hartwick, $3.

Turkies.—1. B. B. Kirtland, Greenbush, $2. 2. Wm. H. Richardson, Albany, $1.

Geese.—1. Samuel R. Mott, Mechanicsville, Saratoga, $2.

Ducks.—1. Wm. H. Richardson, Albany, $2.

Dressed Beef.—Chas. Snowden, Albany, 4 quarters, Diploma.
2. James Battersby, Albany, Small Silver Medal.

A very superior piece of beef, taken from an ox that weighed before being slaughtered, 2,910 lbs., and the dressed meat 1,946 lbs., was received from Mr. Thos. E. Broadway, Clinton market, New-York. It was a conspicuous mark in the exhibition, and elicited very general attention.

LIVE FOWLS.

The committee highly commend some English Dorkings, exhibited by Master Benj. W. Johnson, as also a fine pair of Shanghae Chickens.

Ogden Osborn, of Watervliet, exhibited a very extraordinary pair of Shanghae fowls, that would do credit to any show. Fine Black Polands, by Wm. Richardson. Albany; two fine Shanghaes by Mr. Younghans, Rensselaer county.

Messrs. Blanchard & Co., of Kinderhook Wool Depot, exhibited some very choice fleeces of fine wool, which attracted much attention.

THURSDAY EVENING.

The Society met in the Assembly Chamber. The premiums were announced by the Secretary.

Mr. E. S. Hayward, of Monroe county, one of the firm of N. & E. S. Hayward, being present, to whom the first premium on Farm Management was awarded, the President, on presenting him with the Silver Pitcher which had been awarded, made some very appropriate remarks, which were responded to by Mr. Hayward, who returned his thanks to the Society for the honor which had been conferred in the award for best farm, which had been presented before the Society at this Annual Meeting.

M. Delafield then delivered the following address.

ADDRESS.

The agricultural year of the State Society has reached its latest hour, and within that hour the period of my probation closes—with that hour will terminate the duties which, with temerity, I undertook to fulfill. Conscious of love for the cause, and devotion to its objects, a hope is indulged that your interests have not been neglected, and that all power is restored to you unimpaired.

Permit me to ask your attention, for a portion of this hour, while we glance at the past and attempt to penetrate the future; to ascertain the value of the labors you have caused to be liberally expended; the results derived from them; and the encouragement presented for continued and greater efforts. If, in any of my remarks, there appears a freedom bordering on personality, let it be excused for the benefits which are concomitants to strong lights and shades; if any allegations startle the imagination of those who have viewed agriculture as the dull, unintellectual lot of the ignorant, let investigation be roused to test the truth or discard the fallacy of each proposition.

Three score years and ten have only now been numbered with the past since the site of this edifice, of this Capitol of the State, was covered with wild, entangled woods, giving shelter and concealment to a foe whose knife and hatchet caused wide-spread terror and dismay; these seats, occupied from year to year by patriots and statesmen, whose wisdom and able counsels guided us to national pre-eminence, now cover the ground where the wild notes of roving red men made the blood to course faster through the arteries of our fathers, and caused the timid mother to strain her infant closer to her bosom; all beyond the confines of this now populous, busy, and enterprising city was a wilderness. How few can, at this day, credit the dangerous and perilous situation of the families who then clustered in Albany, forming a city with only three thousand five hundred inhabitants! How few can call to mind events in the youthful days of men yet living, and connected with the perils of that period! To some few of us the month of August, 1780, is yet memorable, when the stealthy Indian, instigated by promises of reward, entered the residence of a gentleman in this city, (General Schuyler,) with the bold intent of his abduction; and the man yet lives, an honored and respected farmer of Western New-York,* who was present, as a child, at the scene of treachery. And it may well be, there are some persons here present who can yet picture to the mind, from recollection, the alarm of a family, gathered in the shades of evening around the family board, in supposed security—the domestics scattered about the premises, unmindful of danger—all listless after the toil and heat of an August day—when suddenly the Indians were seen among the trees of the yard and garden. Careful for the safety of his wife and children, General Schuyler hurried them to the upper apartments, and arming himself, prepared to resist the attack. It is foreign to our purpose to describe the agony of Mrs. Schuyler, when, on reaching the upper apartment, she discovered that her infant child had been left in the cradle in the lower room; with a mother's love she was rushing to its rescue, but was detained by the General, whose third daughter, the late Mrs. Stephen Van Rensselaer, descending the stairway, snatched the slumbering child from its couch, was escaping with it, when a tomahawk was hurled, rending her garments, grazing her form; yet she escaped without serious injury, placing the child safe in the arms of the mother. Such scenes were not unfrequent at the recent period named, around this spot where we are thus peaceably and happily assembled. When the war notes of our successful struggle for civil freedom ceased to vibrate, the plow and the scythe were called into action; the hand which had wielded the sword, the spear, or the rifle, soon became accustomed to upturn the furrow or scatter the seed. The astonishing fertility and productiveness of the land, the pure atmosphere of our skies, and the blessings of freedom, induced crowds of adventurers from Europe to seek this land—a land flowing with milk and honey—yielding to labor a rich reward. Commerce started into life, and, as a further consequence, the Manufacturing Arts followed in the train of successful Agriculture. The young nation exhibited the sagacity and wisdom of age, seeming to possess the virtues of the fatherland, without inheriting the prominent errors and vices or prejudices which darkened the history of European governments and people. With this remark, however, let us not forget what the mother has done for the daughter; let us admit, with kindliest feelings, the gratitude we owe for our language and our laws; and let the mother rejoice in the beauty, vigor and intelligence of the daughter. To supply food and raiment for the masses of human beings collected and increasing in cities and villages along the Atlantic shores, taxed the husbandman's industry, and overtasked his lands, inducing him to draw from the same soil, year after year, the various bread-yielding grains. The increase of wealth, from the employment of his labor and his land, hushed into silence the growing evils of diminished products; then, as now, men in their ignorance would attribute to *chance* or *accident* the fast failing fertility of their farms, the absence of remunerating equivalents. True it is, that while the Indian tribes hovered around our settlements, confining our exertions to narrow limits, the diminution of the earth's products did not materially depreciate the value of the soil; for the rapid influx of population gave to the grain field the new character of town lots or speculative grounds, driving the original proprietors, with their sons and daughters, to new lands, in untrodden wilds, there to pursue and practice the same destructive systems as regarded fertility, and plant the germs of new villages. To many this statement will doubtless appear strange, to some extravagant; yet it has been pursued to this day—a wide-spread national evil.

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* Judge Church, of Angelica, Allegany county.

We have it on record that the Father of his Country * declared, in 1792, that "*Systems* of agriculture we had none; our *modes* were within ourselves, and so devoid of calculation, that any attempt at illustration must fail, expose our defective practice, and be considered a beacon of our ignorance." Mr. Jefferson in his "Notes," declared that, "Where our soil had lost its fertility by exhaustion, a less quantity should be occupied, and be *better* cultivated." Yet then, as now, he found it difficult to ascertain the point of deterioration where culture should be increased, and to what extent be carried. In those days of destructive farming, the cultivator had no knowledge of the cause, nor any known means whereby to repair, the damage he inflicted on his farm; yet the statesmen I have named, owners and cultivators of large estates, saw and deplored the evils which in a measure retarded the public weal; and though science had not then pointed to the remedy, they predicted that the improvident course would have an end, notwithstanding the day might be far distant.

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* General Washington, in 1792.

Admitting, then, that the Agriculture of fifty years ago was the result of labor applied *without knowledge*, without system, or calculation; admitting, also, that the evil continues at this day; it is due to the cultivators and farming interests of the State that an explanation be given for the tardy advance of Agriculture, as compared with the improvements in other arts and other departments of science. We need go no farther back than one hundred and sixty-four years to discover the *foundation* of modern natural philosophy; it was then Sir Isaac Newton lived, and, witnessing the fall of an apple from a tree in his garden, conceived the first impressions of the law of *gravitation*. Newton *then* gave life to mechanical philosophy. In 1768—only eighty-two years ago—Arkwright forsook his employment as a poor hair dresser, to erect the first successful mill for spinning. Forty-four years only have elapsed since steam was successfully applied to navigation on the Hudson river; a mighty power, which was at once adapted and applied to almost every branch of Manufacturing industry, being a substitute for the labor of men and animals. In truth, we may say that within the last fifty years, science began to promote the welfare of mankind by discoveries in every department of knowledge; first stimulating the mind by abtruse inquiries into mathematics—then leading to the natural sciences, more particularly the division of mechanical philosophy; thus enabling man to apply his mind systematically to almost every art and science, save only the cultivation of the earth. It was reserved for Sir Humphrey Davy to open the portals of science to the farmer, about the year 1813—giving to us only thirty eight years to investigate and comprehend the properties of matter, and the applications of its divisions and sub-divisions to our uses in all the various departments of Agriculture.

The discoveries of Davy gave him rank among the most distinguished chemists of the age. Though, when a student, he was pronounced an "idle and incorrigible boy," his taste for chemistry led him into the examination of material substances, and of the law which regulated their *composition* and *decomposition*; he was thus led to the examination of soils and of the atmosphere; from that day the business of the farmer became a science as well as an art. The only science which could open to the agriculturist a knowledge of his soils and plants, his manures, or matters inimical, is independent of all other sciences for explanation of its principles; neither can any of its facts be ascertained or anticipated by mathematical reasoning.

Time and experiment have raised the science of chemistry to its eminence, and experiment only will open to us new principles or facts. Thus it seems evident, that the recent or latter application of science to Agriculture may readily account for the hitherto slow advancement of improved farming, and the comparative want of knowledge among farmers. Thus, too, it will be seen that most classes of men had advantage over the cultivator of the soil by the earlier development of facts connected with their several pursuits. Minor causes have presented additional obstacles to improvement. A natural aversion to change long practised habits, the power of prejudice, the life of the farmer—these have conspired, until within a few years, to render difficult the diffusion of information. Happily, these obstacles are fading before the influences of steam, the railways, and electric telegraphs. Every intelligent man now knows, and feels sensibly, that science makes us more expert, skilful, and useful in all works by which we can earn our bread; and experiences a thirst for information, a thirst which has from year to year been painfully aggravated by the neglect of our Legislatures to listen to the farmer's wants—*wants*, in the earnest chase of which, "Dream after dream ensues; and still we dream that we shall still succeed, and still are disappointed."

The prediction, in 1800, that the destructive system of the farmer would have an end, is now in the course of fulfilment. Efforts were made at various periods to rouse the energies of the people to withstand the growing evil of exhaustion; but it was reserved for the farmers of 1840 to remodel, and give to the State Agricultural Society a vitality, energy, and influence to break up old modes, to weaken long indulged habits of error and prejudice, and to draw men from the paths of thought in which they had moved for ages.

Among the first who stepped forward as benefactors, we find recorded on our earliest pages the names of E. P. Prentice, Luther Tucker, J. McD. McIntyre, Edward C. Delavan, C. N. Bement, and J. B. Nott, of this city, (Albany;) George Vail, Alexander Walsh, and H. D. Grove, of Rensselaer; Jeremiah Johnson, of Kings; J. P. Beekman, of Columbia; Anthony Van Bergen, of Greene; Robert Deniston, of Orange; Willis Gaylord, M. D. Burnet, and Enoch Marks, of Onondaga; B. P. Johnson, of Oneida; J. M. Sherwood, of Cayuga; H. S. Randall, of Cortland; Oliver Phelps and Myron Adams, of Ontario; G. V. Sacket, of Seneca; William Garbutt, Ransom Hawson, and L. B. Langworthy, of Monroe; James S. Wadsworth, of Livingston; T. C. Peters, of Genesee; Lewis F. Allen, of Erie; and L. A. Morrell, of Tompkins.[*]

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[*] The Society originated in 1832—warmed into life by the zeal and energy of a few friends of Agriculture. Among them we find the names of

LE RAY DE CHAUMONT, *President*,
E. P. LIVINGSTON,
AMBROSE SPENCER,
JACOB MORRIS,
ROBERT S. ROSE, *Vice Presidents*.
P. S. VAN RENSSELAER, *Recording Secretary*.
JESSE BUEL, *Corresponding Secretary*.
CHARLES R. WEBSTER, *Treasurer*.
H. W. DELAVAN,
JOHN TOWNSEND,
H. HICKOX, *Executive Committee*.

An act of incorporation was granted by the Legislature, in April, 1832; but little or no general interest was manifested, on behalf of Agriculture, for many years.

Judge Buel, with a praiseworthy devotion, established "The Cultivator" in 1834, as the

To the energy and well directed efforts of these men, to the spirit derived from them by their successors, is due the elastic spring which characterizes our present agricultural endeavors, and whereby the application of science is made to impart new views, substantial improvement, renovated farms, and remunerating crops. The influences of your Society have given to the farmer better hopes; they have opened to his view a new soil, a new power, and a new mind, each more perfect for the production of comforts, happiness, and, above all, gratitude to the Giver of all good, for the inestimable benefits conferred upon us. To your Society, then, and to the intelligent farmers of New-York, who seconded its efforts, are we indebted for any recent advancement and improvement in our agricultural condition.

Here it may be asked, what advancement, what improvement is noticeable and can be claimed for this State, in regard to its cultivation, since 1841? In reply, let us refer to the census of the United States for 1840, and we find the utmost capacity of our systems and modes was the production of twelve bushels of wheat from an acre; in 1845, the average product, established by the State census, was fourteen bushels per acre; and by the United States census of 1850, we arrive at an *estimated* average of *thirteen* bushels per acre, thus exhibiting an improvement, in the article of wheat, of two bushels per acre in the last ten years.* This im-

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organ of the Society; and, under its patronage, presented to the farmers of the State many important and valuable papers. Judge Buel continued his efforts with unabated zeal until his death, in 1839. It is well known among the people of New-York that Governor Clinton was an early advocate for the establishment of an Agricultural Society, deeming it one of the most efficient aids to develop the agricultural resources of the State. A just tribute was paid to Governor Clinton, by H. Baldwin, Esq., of Syracuse, during the first Fair held by the Society in Central New-York. Mr. Baldwin was, himself, energetically engaged in promoting the objects of the Society, at an early day; so also were Hon. S. Van Rensselaer, Judge Samuel Cheever, Archibald McIntyre, General J. J. Viele, and many other true and zealous friends, whose names do not appear upon the records at the period named in this address.

* Average products, &c., in 1845, per State census:

Wheat,	per acre,	14	bushels.
Barley,	do	16	do
Oats,	do	26	do
Rye,	do	9½	do
Corn,	do	25	do
Buckwheat,	do	14	do
Flax,	do	100	pounds.
Potatoes,	do	90	bushels.

	1825	1835.	1845.
Cattle,	1,513,000	1,885,000	2,072,000
Milch Cows,	....	....	999,500
Butter,	....	....	lbs. 79,501,700

provement may be more apparent when we state that, in 1845, our wheat crops occupied about one million of acres; consequently, the increase, if permanent, is an *annual* gain to the State, in this cereal, of about TWO millions of dollars. The question, then, as to recent improvement, seems to be sufficiently answered, without spreading before you the details of other products.

Reference having been made to the census of the United States, it may be useful to draw attention to a remarkable defect (perhaps we may be pardoned for naming it as culpable negligence) in the action of the late session of Congress, when settling the form for the census of 1850; all inquiry has been omitted as to the quantity of cereal grains produced *per acre*—a fatal blunder in a document of such importance to the nation; a blunder depriving us of information in regard to the comparative condition of one of the most valuable sources of the nation's prosperity. This subject is worthy of attention, because, although the State of New-York has done much to perfect our local statistics, yet much more is needed to bring the benefits of this branch of knowledge to the fireside of every farmer, that he may be made more familiar with the sources of demand and supply—that labor may ascertain the source and just proportion of remuneration, and that values may be less fluctuating, and the farmer less exposed to temporary and artificial influences upon markets. It is not to be expected that the mass of the people—(and remember, that mass is the farming population)—it is not expected they will enter into the study of political economy; for, with profound regret I say it, we have been thus far denied the advantages of seminaries or colleges appropriated to our uses, and to fit us for such useful studies. Yet the day is approaching when the beams of science will enlighten in some measure the homestead of every farmer, and his voice will

	1825.	1835.	1845.
Cheese,	....	....	36,744,976
Horses,	350,000	525,000	505,000
Sheep,	3,497,000	4,262,000	6,444,000
Hogs,	1,468,000	1,554,000	1,584,000
Wool, pounds,	....	....	13,864,000
Population,	....	....	2,604,500
Farmers,	....	....	253,300

The U. S. census of 1850, gives to this State 13,000,000 bushels of wheat, and we safely estimate the wheat acres at 1,000,000.

be heard within these walls, where it has struggled to assert its just claims, his mind will yet be stored with knowledge in every science and every art, gilding his peaceful paths, ornamenting and aiding the pure pursuits of his life, giving character to the nation among nations, preserving our highest privileges, securing the best enjoyment of man in this world.

It has been shown that the once fertile soil of this State had been reduced to a degree devoid of power to yield remunerating products; that portions of it have been abandoned from time to time to other purposes, until the difficulty of procuring subsistence from exhausted farms has called aloud for wiser action or some remedial power. We have seen that patriots and honored men have stepped forward, and, by combined efforts under your State Association, have collected and disseminated knowledge; they became the leaders of thought; they foresaw that new paths of thought must be opened, new light diffused, old prejudices eradicated, erroneous practices arrested.

Look back once more upon the condition of this noble State, in the days of our fathers; read the descriptions by its early historians, and we are made to know that it was indeed "a good land—a land of brooks and water, of fountains and depths that spring out of valleys and hills; a land of wheat, barley and vines; a land of oil, olive and honey; a land wherein thou shalt eat bread without scarceness; thou shalt not lack anything in it; a land whose stores are iron, and out of whose hills thou mayest dig brass." We know how abundantly it responded to the husbandman's labor; and we have seen how it fell off by degrees, from an abuse (and ignorance, probably) of the riches and blessings stored in the earth—ignorance, too, of the healing and recuperative powers within its bosom.

Let the meed of praise be awarded to your Association for their efforts to restrain the evil, and to open the doors of knowledge to all who would partake; as far as its power extended this has been freely done, without measure or stint; to this hour its gates have been open to all—widely has it extended a hearty invitation to enter, and partake of every benefit and advantage. Among the means to effect the great objects in view, the Society has collected from the counties of this State, from other States of the Union, and from foreign lands, all useful facts for the promotion of Agriculture; it has encouraged the application of knowledge thus acquired, and, by results, has carried conviction to every candid, inquiring mind, that the soil possesses powers sufficient, when well and properly cultivated; and that its elements, with their distinctive properties and uses, must be comprehended and understood. If your State Society had made no farther progress, it would have been entitled to the people's gratitude; but it has gone in advance of this great work: during the last ten years, it has recorded the facts now stated, comprising ten volumes of their Transactions, forming a treasury of agricultural knowledge, fully explanatory of the application of science to our profession, and keeping pace with experiment and discovery from year to year. These volumes present to the observing farmer, to the mechanic, to the merchant, to the man of science, and to the statesman, matter for thought, study, and application. We find on its pages well digested and arranged materials in the department of chemistry applied to Agriculture, which, in fact, is the exposition of the elements of all matter, *wherewith* and *whereon* we as farmers bestow our labor. Physics, more especially in the division of mechanics, as being the right arm of Agriculture, is carefully treated; natural history, also describing natural objects useful or injurious to our profession; we find, also, extended notices of the products of the State, with their quantities and cost of production. In fine, we find in these volumes of Transactions a combination of knowledge, exhibiting objects and properties upon which, in a great degree, depend our safety, our comfort, and our enjoyment of life.

Thus you have before you, in part, the labors of your Association. Allusion might be made, with propriety, to the summer and winter exhibitions of your Society; their happy influences, not only as encouraging excellence and competition, but as furnishing the means for active exchanges of commodities. These festivals carry with them their own commendation; they illustrate the effect of agricultural life upon our character and condition; they are the *true* World's Fair, giving knowledge of our productions and ingenuity to all quarters of the world; inviting commerce to deal with us in the *useful* and *essential* objects of man's good; enriching our nation, so that "gold is laid up as dust, and the gold of Ophir as the stones of the brooks."* May our wise men and rulers never forget that pride and luxury will palsy the arm of Agriculture, and bring neglect upon honest labor! may their wisdom ever be directed to encourage the *useful*, without presenting any obstacle to the *ornamental!*

While we view the labors of your Society with satisfaction, and acknowledge the wisdom of our legislators in causing them to be spread widely among the people, we must not, we cannot shut our eyes to the truth, that we are but just emerging from dark ignorance; we must not flatter ourselves that we see plainly the broad and shining light of science; we are but in the shadows of the valley; we see the bright rays darting over the mountain's top into the far wilderness, strongly marking its outline, and shedding its genial glow upon us. Who among the sons of men can yet define the cause of the chemical differences of matter? Who can declare the temperature of the regions of space? Who can assign a reason for the irregular form of the continents of the globe, or for the position of the highest mountains or the lowest valleys? We know the facts, yet the cause is unknown; we see results, and signs of action, yet gather no insight into physical cause. We know the Source of all power and might; we know our duty to reverence and adore that Power—humbly and submissively to admit our feebleness, ardently to deserve and to desire, more and more, that knowledge which teaches us to avoid error—to do right. Our fathers saw clearly and felt that, to enjoy and be worthy of civil freedom, we should be prepared by instruction and education to understand our duties to God and to our neighbor; to effect this primary object they established Common Schools, which, like the stars of heaven, are studding our country's surface with precious gems, planting the root of prosperity, whose branches will spread till they cover the land. These schools, however, are chiefly elementary; they shed a general light, while greater lights are needed for the more perfect training of man's intellect. Academies, colleges, and universities are these greater lights, attracting all who love and honor knowledge; they are the hallowed spirits watching our destinies, guiding us on the road to eternal life, driving far from us the ill omened birds of sadness which soar above our heads, and preventing a resting place for them or for their dark nestlings.

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* The gold introduced into the U. S., in the year 1851, amounts to about fifty millions of dollars.

None will deny—no American will deny—that ignorance is degrading; all feel and admit that our public safety depends on the intelligence of the people; hence it is we have adopted systems for the wide diffusion of knowledge, made readily applicable to various positions and duties of life. All may see that, in proportion as this diffusion has pervaded the people, so have they prospered. So evident and satisfactory has been the result of our system, that we must view the mind of any man as insignificant which does not esteem *education* as the best means to preserve us from the deadly mischiefs of ignorance, and lead us in the way we should go. Look at *England*, as she stands high amid the nations of the earth, rightfully proud of many of the best scholars of the present day as well as the past; yet, with her masses of people untaught and uneducated, they are dependent upon foreign nations for sustenance,[*] and a powerful military array is too often needed to check the errors of ignorance. Look at *Scotland*, once degraded in ignorance; now educated, or possessing and *offering* the means of education to all her people. Where do we find a poor Scotsman? What nation is more proverbial for thrift? The contrast is strong, but true as regards the possession or absence

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[*] The Live Stock imported into England from the Continent, in 1851, consisted of:

Oxen, Cows and Calves,	77,700	head.
Sheep,	190,621	"
Swine,	12,801	"

The importation of Wheat, in 1851, exceeded 30 millions of bushels, and was an increase on the previous year.

The import of Indian Corn amounted to 13 million of bushels.

The import of Flour was 5,516,004 sacks, equal to over 44 millions of bushels, or near 8 millions of barrels.

of instruction or education. Stronger contrasts might be produced by naming continental nations of Europe; but where despots and tyrants reign, the people have no share in the blessings of knowledge; they have but one short lesson for life, quickly expressed in the words "Submission, Obedience"—blind and uncomplaining. How happy, how content ought we to be, that Tyrranny and corruption cannot inhabit the land where Freedom flourishes! We forbear comparison with our own country; each may do so for himself without self-reproach.

The legislators of this Empire State, who have occupied these halls, aware that their chief duty was to give strength and stability to our institutions, have, with commendable zeal and care, provided for the general instruction of the people, and by so doing have inculcated an imperishable sympathy—a mutual interest—a personal interest—in all the affairs of the State. Who can examine into the expenditure of more than ten millions of dollars, devoted by them to our educational system since its establishment, without a thrill of joy at the wide-spread benefits, to which each one of us has contributed in proportion to our means. What a noble, munificent offering to mind and its cultivation! yet how insignificant the offering, compared with the gigantic, immeasurable results of mind derived, by its means, to benevolence, virtue, and science! Look back once more; compare the past and present. In 1638 a small, glimmering light was seen in the East (in the village of Cambridge;) there was seen the first light of its kind in this Western hemisphere; the *first printing press* owed its existence and erection to Cambridge, in Massachusetts; the next sprang into life in the city of New-York, in 1693; and the first newspaper printed in America was in 1704. In 1800 we had 300 printing presses in our Union, printing and publishing a hundred books and pamphlets annually; in 1825, six hundred presses were similarly employed; which, in 1830, had increased in number to 1200 improved machines; and, at this day, may be estimated at 2800, sending forth *five million impressions daily!* sending forth every work in literature, science, and the arts as rapidly as authors can supply ideas. This power of the press produces reaction, and stimulates the mind to greater efforts, exhibiting effects and results which almost defy expression.

Again in 1793, nineteen colleges existed in the States; now we have one hundred and twenty, or more. In this State, we had two colleges until 1812; but four in 1825; at this time we have eleven colleges, with an aggregate endowment of more than $1,000,000. We have also 204 academies, enjoying a fixed capital of $1,700,000. The colleges give instruction to the average number of 852* literary students annually, while the academies instruct about 18,000 pupils annually. These facts are presented to you in detail, purposely, that we may the more distinctly understand the position which is presently to be offered.

Self-love may induce us very complacently to view these advantages, and to believe that we are a well instructed people. 'Tis true only by comparison, however, with other sections of the world—only by comparing nation with nation. Yet our self-esteem is checked when we reflect that all "which hath been is now, and that which is to be hath already been;" that from birth every human being travels the same road or bye-paths, seeking for information, distinction, and power. The only difference in our favor may be attributed chiefly to the art of printing, by which we have multiplied records or mementos of that which hath been, allowing to us a longer portion of our lives for the accumulation of *new* facts, and, by their use, to establish new principles leading to experiment. Who, then, can contemplate the three-fold system of education in this state, comprising the common or free schools, our academies, and our colleges, filled with the records of the past,—who can contemplate them without a high satisfaction as regards the general character of our people for virtue and knowledge?

With these views and facts spread before you, judge of the condition of the farmer of New-York: what participation has he in either branch of our noble system, which *does* or *can* offer to him instruction necessary for and adapted to the perfect understanding of his vocation or profession? None: no, not one exists in this State where a young man can be taught the theory and practice of Agriculture, fitting him to perform his duties in a perfect manner. "Four-fifths of our active population are employed in the cultivation of the soil, and the rapid expansion of our settlements over new territory, is daily adding to the number of those engaged in that vocation. Justice and sound policy, therefore, alike require that the Government should use all means authorized by the Constitution to promote the interests and welfare of this important class of our fellow-citizens. And yet it is a singular fact that, whilst the manufacturing and commercial interests have engaged the attention of Congress and Legislatures during a large portion of every session, and our statutes abound in provisions for *their* protection and encouragement, little has yet been done directly for the advancement of Agriculture. It is time that this reproach to our legislation should be removed; and I sincerely hope that the present Legislature will not close their labors without adopting efficient means to supply the omissions of those who have preceded them."

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* The number of children attending the common schools averages 800,000.

An Agricultural College—charged with the duty of collecting and disseminating correct information as to the best mode of cultivation, and of the most effectual means of preserving and restoring the fertility of the soil, and of procuring and distributing seeds and plants and other vegetable productions, with instructions in regard to the soil, climate and treatment best adapted to their growth—could not fail to be, in the language of WASHINGTON, in his last annual message to Congress, a "very cheap instrument, of immense national benefit."

Divinity, Law, Medicine, and Literature have their special colleges; surely Husbandry, being based on principles of science, should not be an outcast, neglected, abandoned to rise or fall as chance alone may direct. No, no; as cultivators, we need our special institution, to teach us *why* one system of tillage will succeed and another fail; the *reasons* for such difference; the principles which cause that difference; and instruct us in the benefits of the one—the loss ever attendant upon the other. *We need a College*, where we can examine systems, theoretically and practically, to detect erroneous views—to hold fast on sound practices—to distinguish true from false principles.

Here it may be pertinent to remark that many of us, too often, and without consideration, inveigh against *theory* in Agriculture; and some men inculcate or urge *practice* as alone sufficient, or as possessing superior claims to our attention. This is a mistaken view of the farmer's true position. It is erroneous as regards every class of men; it is a contracted view, which must prevent or delay all improvement wherever it is held and maintained. The hour is too short to present proofs of inimical tendencies of such views to our respective farms and occupations; and must be content with the remark that theory is the very starting point of improvement—the conception of some new principle or action. PRACTICE is no more than *a repetition* of what has been done before, without reference to advance.

But though we often hear men claim to be altogether PRACTICAL, and seem to flout theory as a misty vapor, yet, where is the *practical man* so dull, so careless of his welfare, so reckless of his duty to his family and his country, *as not to be* a THEORIST? Permit me to take from this word an evil character, unjustly imposed; to give to it its fair standing among us, that it may not be a stumbling block to those who desire to advance in improvement. Suppose, then, an agriculturist who, for ten years, has closely followed the beaten track of his father; suppose such a man blessed in full measure with a growing family, whose wants necessarily demand a larger outlay as years bring on the child towards adolescence; his farm gives its accustomed yield from his accustomed practice, but not now in a ratio with the demands of his increasing family; prudence or necessity demands a change; what change? It matters not; his mind is roused to do some act to increase his store; that act is by him an innovation; he has stepped beyond old practice; he becomes, in fact, *a theorist*, and thus attempts one step toward improvement. If his idea or theory proves successful, he adopts it, and in time it becomes a habit or practice. Such, then, is the origin of all practices or habits; and every farmer who conceives an idea for the improvement of his farm, becomes, so far, a theorist.

It is absurd, therefore, for us to cling to a notion of being merely practical men, as it would doom us, if it were possible, to be left behind in the improvement of our farms and the acquisition of a competence. It is contrary to the spirit and to the mind of the American people; a spirit somewat peculiar—so much so as to need a new term in our language to express it. The man whose practice is derived from sound *principle*, who compares results, who refuses to be an *imitator*—such a man must ever combine theory and practice; he becomes, of necessity, expert and dexterous; he is intelligent, and is generally far, far more successful than the restrictive and merely practical man, who is sometimes, though now rarely appealed to. This distinction of terms ought to be better and more extensively understood among us farmers; for in truth, every intelligent cultivator is, and must be theoretical and practical, and is, or ought to be thankful to his Creator for giving him a power or capacity worthy of the position.

We need a College, to promote substantially the progress of Agriculture, as connected with the prosperity of the State. *We need a College*, because the principles of farming are intimately connected with science; our practical farming, our daily work, needs a large acquaintance with chemistry, anatomy, botany, physiology, mineralogy, climatology, zoology; neither can we be perfect masters of our work without some branches of mathematics. Many of these divisions of knowledge are well taught in some of our schools and academies. True, and they serve as an initiation to science; but *we* need an institution of a higher character—one devoted to the investigation of the sciences connected with Agriculture—able and ready at all times to give their results to every farmer and to every farmer's son. *We need a College* because

Agriculture demands appliances, extensive and various, for our uses—far, very far too large to form a branch or mere adjunct to another institution—and because our interests are sufficiently important to demand and occupy a college and farm consecrated to our objects and pursuits. Again: *we need a College*, because experience has for ages proved that art and science, as taught in all our colleges—that association with students of other pursuits, ever have attracted and drawn away our agricultural youth into other paths. In the present state of society, this is an inevitable evil; the causes have been already glanced at, and may not be remedied in our day. Another consideration may be offered, in the need that our farmers may ever find themselves like other classes of our citizens, equal in intelligence and knowledge with those of all foreign nations. Yet see how far short of means we are, as compared with some parts of Europe:

Agricultural Schools in Great Britain,	70
" " in France,	75
" " in Prussia,	32
" " in Austria,	33
" " in Russia,	68
And the State of New-York,	*Not one!*

The effect of these European institutions is excellent tillage, the appearance of fertility, and high cultivation.

We are warned, by the experience of foreign efforts, that agricultural schools have not been efficient without the aid of government; and we may reasonably suppose the abortive attempts in this country suffered from want of power. It seems conceded, also, that agricultural societies, though productive of great public good, cannot diffuse the details of knowledge needful for the farmer. It has been proved also that theories must be tested by practice; and such as are not well sustained by practice must be rejected. All primary schools and academies have proved insufficient in Europe for agricultural education, though they have been found good auxiliaries in preparing pupils for the main institutions. It has been well established, also, that two classes of students, having no concert of action as equals, and no sympathy for each other, cannot harmonize in the same establishment; one will obtain a precedence injurious to the other.

With necessity for a college pressing hard upon us—with the experience of Europe before us, to avoid their errors and adopt their wisdom—why do we hesitate? Why, from year to year, do we "drop our buckets into empty wells, and growing old in drawing nothing up?" The farmers of New-York have again and again knocked at the doors of these halls in vain. For what have they asked? Not for a monopoly, not for protection, not for any undue advantage. No, no; the farmer would not deign to ask, he does not need, any such unjust aid; but he *does* ask, and *claims*, an equal participation with all classes of citizens in educational means, that he may, with equal alacrity, with equal skill, perform his duty to the State.

An error of magnitude, as it seems to me, has pressed like an incubus on the movements for an agricultural college—the unnecessary magnitude and expense of the systems proposed; systems rather fitted to gratify vanity than to produce effective good. Stone palaces, sumptuous halls, and the elegancies of life have no natural or necessary connection with agricultural improvement; on the contrary, luxury, when attached to the farmer's establishment, is like a parasite, fawning but to destroy. Many who cheerfully contribute large amounts to the support of the State revenues, have viewed with regret proposals for profuse expenditures, being well persuaded that moderate appropriations, discreetly applied, will prepare the foundation of an institution with a suitable superstructure, adequate to our wants, fulfilling every needful purpose, an ornament to our State, a means of wealth to the people. Such an institution might furnish knowledge of every principle upon which productive cultivation depends; might develop new principles, explain and illustrate them, not by theory only, but by every practical operation, always reducing theory to practice. Such an institution may not educate an ornamental man, as such only; for the hand must be taught to labor, while the mind is taught to perceive, to remember, and to combine facts for *useful* purposes.

Give to the agriculturist such an institution, and every acre of the State will yield an increase; waste places and unwholesome swamps will disappear; instead of emigrating to dull prairie lands, where wholesome wheat cannot be grown, our farmers will cling with affection to the homes of their fathers; population will increase; demand will increase; wealth will increase; and Agriculture will stand side by side, co-equal, with any and every other art or science—honored and esteemed by all.

Feebly as I have treated this important theme, may it be kindly received and considered by all who feel an interest in the welfare of their State and Nation! I invoke for this great object the careful action of every County Society; I ask for it the close and careful investigation and zealous support of every farmer who desires the improvement of his estate; of every man, of whatever vocation, who truly loves his country.

And now, gentlemen of the Society, my brief term has expired—a term full of pleasant incidents and associations, never to be forgotten; and to your prompt aid, sound advice, and better experience do I attribute all that is worthy of commendation throughout the year. My last act is one of unmingled pleasure—an act which I doubt not will raise your Society still higher in the confidence of our brother farmers and of the whole people; I now introduce to you HENRY WAGER, your President elect.

In conclusion let me urge you to greater efforts—to pursue a wise and temperate policy—a steady, onward action—in which all may plainly discover the high motive of preserving what is good, by reforming in time what is evil; thus you will from year to year bequeath to your successors an institution unimpaired, and which, by the blessing of God, will entitle you to the gratitude of men, of the State, and of the Nation.

At the close of the address, Mr. Delafield, introduced to the Society, Mr. Henry Wager, his successor, who returned his thanks to the Society for the honor conferred on him in selecting him, in a few brief remarks.

Dr. J. P. Beekman rose to make one suggestion. In the eloquent address just delivered, allusion had been made to a State Agricultural College. He thought it would be more democratic, and more in unision with the feelings of the farmers, to call that institution a school and not a college. He would move that the thanks of the Society be given to Mr. Delafield, for the able address, and that a copy be requested or publication in the Transactions.

Hon. H. Baldwin, of Onondaga, referred to the great and valuable services rendered to the Society by the President. He had listened with unfeigned pleasure to the address, and in particular to that portion which alluded to the Society itself. It was a plain, scientific, theoretical, and philosophical address. But he regretted one omission in the names of those illustrious men who had been connected with the Society at its early foundation. He alluded to the immortal name of Gov. Clinton. He hoped if the address was published, which he would most cordially vote for, that that name might be inserted. He knew it was an unintentional omission. He also alluded to the names of Gen. S. Van Rensselaer, John Townsend, Judge Cheever, as well as himself, who, in the early history of the Society, had taken an active part in its proceedings.* He also referred to the progress made by our sister State, Ohio, in Agriculture. In, this the Empire State is behind her. She is raising at present a fund, by private subscription, for the establishment of an Agricultural College, and she intends to apply to the Legislature for aid. He would ask, is Ohio to have one and not New-York? Are we to send our sons to Ohio to be educated instead of they to us? He humbly trusted that before this Society should adjourn, in view of the great importance of the subject, they should adopt some means of laying their claims before our legislators at its present session. He hoped the resolution would be adopted. The resolution was then put and adopted.

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* Vide note, ante, p. 189.

HONOR TO KOSSUTH.

Mr. Bloss offered the following resolution:

Resolved, That the Executive Committee of the New-York State Agricultural Society be, and they are hereby instructed, to present our most cordial and hearty welcome to the illustrious Kossuth, the Hungarian farmer, and to present him with the Honors, Medals and Transactions of our Society, as an humble token of our appreciation of his patriotic aims and republican aspirations and principles, and as the first fruits of that tree of liberty which our fathers planted, and through the efforts of enlightened patriotism we hope and trust that not only Hungary, but the whole world may yet enjoy.

After remarks from Mr. L. F. Allen and Solon Robinson the same was adopted.

Mr. L. F. Allen offered the following resolution, which was adopted:

Resolved, That the best interests of the Society will be promoted, and its influence npon the Agriculture of the State be most beneficial, by expending its entire annual income, and increasing the list of premiums, whenever the sum of $10,000 shall be invested as a permament fund.

AMENDMENT OF CONSTITUTION.

On motion of L. F. Allen, the Constitution was amended by substituting the *second Wednesday* of February, as the day of holding the annual meeting, instead of the 3d Wednesday of January.

A motion was made by Mr. Kelly, that it be recommended to the Executive Committee, to hold open the Fair for one week, instead of three days as heretofore; which was lost.

Mr. H. C. White proposed that the Executive Board of the Society be so constructed as to consist of the President, Secretary and the latest Ex-President, together with one member from each of the Judicial Districts of the State, such member to be elected by the County Agricultural Societies within such district: laid on the table.

The thanks of the Society were tendered to the Hon. the House of Assembly for the use of their halls for the meeting of the Society.

The Society adjourned, on motion of Hon. J. A. King.

B. P. JOHNSON, *Secretary.*

EXHIBITION OF FAT CATTLE AND SHEEP AT ANNUAL MEETING.

The exhibition of fat stock, of dressed meats and poultry, and of samples of grain in quantity, were for the first time had at the annual meeting. The show of stock far exceeded the expectations of the Executive Committee, and the interest which was manifested, as well as the approbation it received from the members of the Society, who were present in larger numbers than on any former occasion, give assurance of its being a very important movement for the Society; and it is believed that its continuance will secure, eventually, a show of as much importance to our State as the great Christmas Fat Cattle Show, held in London, is to England. The number of entries of fat oxen, 9; three year old steers, 9; fat cows, 2; fat heifers, 5; 25 in all. Of the quality of the animals, the judges pronounced them very superior. The prize ox of Mr. L. Turner of Geneseo, could not easily be excelled; he was ¾ Durham. The ox and fat steer of Mr. McNeil, of Schoharie, were very superior. The cow of Mr. W. A. Mills, of Geneseo, and the heifers of Mr. D. S. Baker of West Bloomfield, and Mr. Mills, of Geneseo, were of great excellence. Mr. Turner, Mr. McNeil, and Mr. Ledyard, of Cazenovia, each had an ox that was but little below those which received the prizes, and special premiums were awarded them; and the heifers of Mr. Baker and Mr.

Mills, to which special premiums were awarded, were worthy of the premiums they received. Erastus Corning, jun., of Albany, exhibited a two years old Hereford heifer, recently imported by him, which was pronounced very superior by the Judges. Some very good cattle were exhibited by Mr. Hill, of Clinton county, and Mr. Sheldon, of Cayuga.

FAT SHEEP.

Two pens of long wooled sheep, 5 each, were exhibited. Those of Mr. McNeil, of Schoharie, were remarkably fine, and showed well the qualities of the long wools for mutton. Of Southdown, Mr. J. McD. McIntyre, of Albany, exhibited 5, which were very much admired, and showed the perfection of that most excellent breed of sheep. A very fine pen of middle wooled sheep was exhibited by Mr. D. S. Baker, West Bloomfield. Two pens, 5 each, of cross breed sheep were exhibited by Mr. McNeil and Mr. Parker, which were very fine animals, a cross between the long wools and the Merinoes.

FAT MUTTON.

Some very superior mutton was exhibited. Mr. Charles Snowden exhibited 6 carcasses Southdown, that were very fine. Three carcasses of cross breed sheep, two years old, and one yearling, raised and fattened by Richard Peck, Lima, Livingston county, weighing 123, 112, 108, 111—fed on corn and shorts for about ten weeks, attracted much attention; as did a four years old long wooled sheep, also fattened by Mr. Peck, weighing 137 pounds.

Some fat pigs, 18 months old, Cheshire breed, weighing 575 pounds, of E. Gove & Sons, Watervliet; and two by Mr. O'Hara, of Scipio, Cayuga county, weighing 569 and 558 pounds; and several very fine hogs, under 300 pounds, were exhibited. Turkies, geese and ducks were exhibited, which showed that due attention had been given their feeding.

The show of grain was very good, and many very choice samples of spring wheat, Indian corn, oats, barley, rye, buckwheat

&c. were on exhibition. The spring wheat, two samples, was extraordinary heavy and plump, weighing 61 pounds to the bushel. Oats exhibited by J. McD. McIntyre, raised on his farm near the city, very clean, weighing 39 lbs. per bushel; multicole rye, David Conradt, Rensselaer county, 55½ lbs. per bushel.

An exchange of grain among the exhibitors, as well as purchases by farmers in attendance, were made to a considerable extent, and it is believed that this may hereafter prove of great advantage to the farmer.

STATE AGRICULTURAL ROOMS.

Executive Meeting—New Board of Officers. January 23, 1852.

Present—Mr. Wager, President in the chair; Mr. Delafield, Mr. King; Messrs. Vail, Prentice, Allen, Morris, Chamberlain, Tucker, Lee, Corning, Blanchard, Johnson.

Col. Sherwood, ex-President, was invited to sit as consulting member. Mr. Johnson, the Corresponding Secretary, was designated as the acting Secretary, to take charge of the rooms and the general business of the Society.

Townend Glover—Models of Fruit.

Pursuant to the resolution of the Society, the Executive Committee took up, for consideration the subject of Mr. Glovers models; and on motion of L. F. Allen, it was

Resolved, That the sum of one hundred and seventy eight dollars be appropriated to purchase of Townend Glover, a collection of the fruits, which have been recommended by the Pomological committees of this Society, and published in the Transactions of the Society up to the year 1851, inclusive; the apples being in duplicate, and at the prices named in a memorandum furnished by Mr. Glover, (on file;) this proposition including also a case of insects on exhibition.

(Under this resolution 78 varieties of apples, 27 of pears, 17 of plums, 14 of peaches, 9 of cherries, 3 of apricots, 2 of nectarines, 2 of grapes, 4 of strawberries, 4 of raspberries, 4 of currants, 4 of gooseberries, with the valuable preparation of insects at the rooms, will be secured to the Museum of the Society.)

It is intended to increase this list, and add vegetables that are approved, in their season. A. J. Downing, E. P. Prentice and L. G. Morris, were re-appointed as the committee to superintend and direct the preparation of the fruits ordered, that have not been already modelled.

The next Fair, on motion of Mr. Allen, was appointed to be held at Utica, on the 7th, 8th, 9th and 10th of September, provided the citizens of Utica, on or before the 5th of February next, present the requisite security for the defrayment of such expenses and erections as shall be designated by the Executive Committee.

On motion of J. A. King, it was

Resolved, That the sum of $100 be appropriated, to be awarded for the best experiment made in this State, in the preparation of flax, with a view to its substitution and use in the place of cotton.

The premium list was then taken up: previous to the consideration of premiums, letters were read by the Secretary, from L. B. Langworthy, Col. Sherwood, A. B. Allen, E. N. Thomas, Jonathan Edgecomb, L. F. Allen, W. H. Sotham, Francis Rotch, Mrs. Sarah Nash and others, containing suggestions for improving the list of premiums.

After completing the stock list, the list of farm implements, &c., was taken up and agreed to be increased at least 50 per cent, with the addition of such implements and articles as are not in the list; and that an increase of the premiums in the domestic department, fruits, &c., of at least 25 per cent, be also made, with such additions as shall be necessary.

The trial of Grain Reapers during the summer, together with Mowing Machines, Cultivators, Drills and Horse Powers, &c., was decided upon. The particulars of the trial, with the requirements will be given at an early day.

The Board then proceeded with the list, and having settled the advances to be made in the different divisions, &c., directed the Secretary to prepare the list, with the alterations and additions, to be submitted to the Board at their next meeting, to be held on Thurday, February 5th, at 10 A. M.

Mr. Prentice, Mr. Tucker, and Mr. Corning were appointed a committee to loan such portion of the surplus funds as are unnecessary for current expenses of the Society. Adjourned.

B. P. JOHNSON, *Secretary.*

Monthly Meetings.—The Executive Committee will hold their monthly meetings on the first Thursday of each month, at the Agricultural Rooms.

REPORTS OF COMMITTEES AT ANNUAL MEETING, JANUARY 1852.

MANAGEMENT OF FARMS.

The Committee on the management of farms after a careful examination of the reports presented to them, award,

The first premium, a silver cup, value $50, to Messrs N. & E. S. Hayward, of Brighton, Monroe county.

The second premium, a silver cup, value $30, to McCulloch & Kirtland, Greenbush, Rensselaer county.

The third premium, silver cup, value $20, to Albert G. Ford, Rockton, Herkimer county.

Sherman L. Wattles, Sidney Centre, Delaware co., 6 vols. Transactions.

Joseph B. Morse, Cazenovia, Madison co., 6 vols. Transactions.

The committee would call the attention of the Society to the statement of the Messrs Hayward, as showing the careful and thorough system of cultivation pursued by them, and also the successful introduction of the raising of seeds for market, a business of importance to the farmer, and requiring more than ordinary care and attention on the part of the cultivator.

The method of reclamation of a comparatively worn out farm, and its present state of productiveness, as shown by the statement of Messrs McCulloch & Kirtland are convincing proofs of the excellent manner in which their farm is managed, and well worthy of attentive examination.

Mr. Ford's farm has been in his possession about three years. He is a young enterprising farmer, and deserves much credit for the manner in which his farm has been managed. His object has been improvement, and returns that will repay his efforts, in which he has been entirely successful. His attention mainly is devoted to the dairy, and his yield per cow, is very large, far exceeding that of the dairy districts at large, and entitles him to very great credit.

Sherman S. Wattles of Delaware county, presented a statement of his farm, containing 125 acres; Mr. Wattles' farm is devoted to grain, to the dairy, and to butter, and appears to be systematically managed. Mr. Wattles has been in the practice of keeping regular accounts of the receipts and expenditures of his farm, from which he derives great satisfaction, as well as advantage. He is not favored with a near market, being about 22 miles from the Erie railroad. His statement is interesting, and he deserves much credit for bringing up his farm to its present condition, from what it was a few years since.

Joseph B. Morse, of Madison county, has 156 acres; 114 acres improved. Mr. Morse has devoted his farm mainly to the dairy; has realized from his cows, 355 lb. cheese, and 42 lb. butter per cow. Mr. Morse has not kept regular farm accounts, but says, "that he has become so thorougly convinced, since he commenced to write his statement, of the benefit as well as pleasure to be derived from the practice, that he has purchased a set of books and intends to commence with the year systematically." Although he has been farming, he states, "for nearly 20 years, he is but just waking up to a sense of the necessity of system in all the departments of business." We have no doubt Mr. Morse, as well as every other farmer, will find advantage in this systematic course, and system in the management of the farm is indispensable to success. We shall be greatly disappointed if Mr. Morse is not heard from again before the Society.

QUESTIONS TO COMPETITORS ON MANAGEMENT OF FARMS.

Soils, &c.

1. Of how much land does your farm consist? and how much wood, waste and improved land, respectively?

2. What is the nature of your soil and sub-soil? Is there limestone in it? What rocks are found in it?

3. What do you consider the best mode of improving the different kinds of soil on your farm? Of clay soil, if you have it—of sandy soil, and of gravelly soil? Answer separately.

4. What depth do you plow? What effect has deep plowing had on various soils?

5. Have you made any experiments to test the difference in a succeeding crop, between shallow, common or deep plowing?

6. Have you used the subsoil plow? and what has been its effect on different soils and crops? Have you drained any of your lands? If so, what soils, and with what results?

7. What trees and plants were indigenous to your soil? Give the names of each?

Manures.

8. How many loads of manure (30 bushels per load) do you usually apply per acre? How do you manage your manure? Is it kept under cover? or are there cellars under your barns or stables, for receiving it?

9. What are your means and what your manner of making and collecting manure? How many loads of manure do you manufacture annually? How many do you apply?

10. How is your manure applied; whether in its long or green state or in compost? For what crops, or under what circumstances, do you prefer using it, either in a fresh or in a rotten state?

11. Could you not cheaply, essentially increase your supply of manure by a little extra labor?

12. Have you used lime, plaster, guano, salt, or any substance not in common use as manure? In what manner were they used, and with what results?

TILLAGE CROPS.

13. How many acres of land do you till? and with what crops are they occupied, and how much of each crop?

14. What is the amount of seed planted or sown for each crop—the time of sowing—the mode of cultivating and of harvesting—and the product per acre? Have any insects been found injurious to your crops? if so, describe them and the remedies adopted. Have you made or can you give an estimate of the value of fertilizing matter taken from the soil by an acre of wheat, estimating 20 bushels per acre?

15. What kind and quantity of manure do you prefer for each, and at what times, and in what manner do you apply it?

16. How deep do you have manure covered in the earth, for different crops and different soils?

17. Have your potatoes been affected with any peculiar defect or disease, and have you been able to discover any clearly proved cause for it, or found any remedy?

GRASS LANDS, &c.

18. What kind of grasses do you use? How much seed of clover, or the various kinds of grass do you sow to the acre? At what season of the year do you sow—and what is the manner of seeding? What kinds of grass are best adapted to lands used for dairy purposes?

19. How many acres do you mow for hay, and what is the average product? At what stage do you cut grass, and what is your mode of making hay?

20. Is any of your mowing land unsuitable for the plow, and what is your mode of managing such land?

21. Have you practiced irrigating or watering meadows or other lands, and with what effect? What is your particular mode of irrigation and how is it performed?

22. Have you reclaimed any low, bog or peat lands? What was the mode pursued, the crops raised, and what the success?

23. Have you succeeded in eradicating the weeds from your farm, if so, by what methods and what weeds are most troublesome?

DOMESTIC ANIMALS.

24. How many oxen, cows, young cattle and horses do you keep, and of what breeds are they?

25. Have you made any experiments to show the relative value of different breeds of cattle or other animals, for particular purposes, and with what results?

26. What do you consider the best and cheapest manner of wintering your cattle; as to feed, watering and shelter?

27. How much butter and cheese do you make annually, from what number of cows, and what is your mode of manufacture?

28. How many sheep do you keep? Of what breed or breeds are they? How much do they yield per fleece, and what price does the wool bring? How many of your sheep usually produce lambs, and what number of lambs are annually reared? How much will your sheep or lambs sell per head to the butcher?

29. What do you consider the best and cheapest manner of wintering your sheep, as to food, watering and shelter? How many in proportion to your flock (if any) do you lose during the winter? What difference, if any, between the fine and coarse wooled sheep, in these respects?

30. How many swine do you keep, of what breed are they, how do you feed them, at what age do you kill them, and what do they weigh when dressed?

31. What experiments have you made to show the relative value of potatoes, turnips and other root crops, compared with Indian corn, or other grain, for feeding animals, either for fattening or for milk?

FRUIT.

32. What is the number of your apple trees? Are they of natural or grafted fruit? and chiefly of what varieties?

33. What number and kind of fruit trees, exclusive of apples, have you? and what are among the best of each kind?

34. What insects have attacked your trees, and what method do you use to prevent their attacks?

35. What is your general management of fruit trees?

36. What other experiments or farm operations have produced interesting or valuable results?

FENCES, BUILDINGS, &C.

37. What is the number, size and general mode of construction of your farm buildings, and their uses?

38. What kind of fences do you construct? What is the amount and length of each kind? and their cost and condition? Have you constructed any wire fence? if so what has been its cost, and what its advantages, and how made?

39. To what extent are your various farming operations guided by accurate weighing and measuring? and to what degree of minuteness are they registered by daily accounts?

40. Do you keep regular farm accounts? Can you state the annual expense in improving your farm, and the income from it, with such precision that you can at the end of the year, strike an accurate balance of the debt and credit? Would not this practice conduce very much to close observation, careful farming, and in the end much improve your system, as well as better your fortune?

41. Give the annual receipts and expenditures on your farm, specifying each.

DESCRIPTION OF HAYWARD PLACE AND THE MANNER OF CULTIVATION.

The property of Nathaniel Hayward and Son.

This farm is situate in the town of Brighton and county of Monroe, one mile and forty-seven rods east of Rochester city, on the Rochester and Webster plank road, and may be called Hayward Place—having occupied it for the last twenty-eight years. When purchased it was all wood land, and all woods, excepting twelve acres partly chopped over, and a log cabin the only building it could boast of. Ten acres were purchased five years since, at a cost of $100 per acre. The farm is well watered, having two durable streams, and three good wells. To the questions proposed we would respectfully offer the following answers:

Soils, &c.

1. Our farm consists of 78 acres, 68 acres improved, 7 covered with wood, and 3 taken for roads and buildings, and no waste land.

2. The soil is various. The high land is a yellow chestnut loam, mixed with gravel and some stones; subsoil, hardpan and gravel. The low lands are black muck and marl, and a clay subsoil. There is some lime stone below the surface, and large boulders of granite, quartz, and hornblende rocks above.

3. The best method of improving the high land is manure, plaster and clover. The muck land, drain and work thoroughly, mixing the muck, marl and clay together, and apply a little long manure. There is no clear sandy or clayey soils on the farm.

4. We plow from 7 to 10 inches deep; deep plowing has invariably, after the first year, increased the crops.

5. We have never experimented with shallow plowing; are satisfied with deep plowing. Our method of breaking up sward land, is a double team Eagle No. 20 plow and three men, one to drive, one to hold plow, and one follow after with a crow bar, and dig all stones that the plow uncovers; plow at the rate of half an acre

per day. This, we think, is the cheapest method, for we rid ourselves of the trouble of working over so many stones, and break up very deep, from 10 to 12 inches.

6. We have not used the sub-soil plow; have drained some low lands, with decidedly beneficial results. The land was too wet to raise corn, but by constructing under drains it has been made dry enough for garden purposes. Our under drains are made of stone, by laying cobble stones at the sides and cover with flat stones, then fill in with small stones on the top, then a litle straw or some shavings, and cover with dirt. The size of the drain depends on the quantity of water, some we have 2½ feet wide and two feet deep, and stoned so as to leave a drain below six inches square. Where but little water is to be drawn off cobble stones thrown in loose, and covered as above, answers a good purpose. We have about sixty or eighty rods of both kinds at a cost of from four to eight shillings per rod. We have about eighty rods of open ditches, there being too much water for the other kinds; these require to be cleaned out once in two or three years, and cost six cents per rod.

7. The trees indigenous to our soil are beech, birch, hard and soft maple, iron-wood, hickory, bass-wood, white-wood, chestnut, white and black ash, white and black oak and elm. Plants: catnip, thoroughwort, wild turnip, sweet flag, peppermint, narrow dock, poke weed, mandrake, strawberry and genseng, and many others.

MANURES.

8. The number of loads of manure applied per acre, depends entirely on the number of acres to be manured and the quantity on hand; usually from 20 to 40 per acre; we usually clean our yards twice a year, spring and fall; haul out in the fall, and plow under for spring crops; sometimes pile it and have it well rotted for spring; prefer to have it plowed under in the fall, and save all the gases that otherwise would escape; in the spring, haul out and plow under; we have no cellars for manures, and it is not kept under cover.

9. Our means for making manure, is from the stock and straw on the farm; haul from the city of Rochester from 100 to 300 loads per year, at a cost of from 12½ to 25 cents per load; we manufacture from 100 to 150 loads per year, and apply from two to 400 annually.

10. We apply manure mostly in two ways·

1st. In a rotten state, for most hoed crops, spread on top and plowed under; sometimes spread after the ground is plowed, and cultivated in with a wheel cultivator. The latter method starts the crops quickest, and is more beneficial to the first crop, but does not last as long, loosing some of its good properties by exposure to the sun.

2nd. Apply in its unfermented state on low lands; for all root crops we prefer to have it well rotted and spread evenly over the surface, pulverized with a harrow and plowed under in the spring, when it cannot be done in the fall. For corn we prefer unfermented manure, when it can be plowed under; when used as a top dressing, we prefer to have it composted and cultivated in.

11. There is no method by which we can increase the supply of manure cheaper, than hauling from the city. We think that muck taken from the low lands, on the chestnut loam would be beneficial, but have not experimented.

12. We have used some lime, ashes and plaster as a top dressing for corn. Ashes applied to corn after the first hoeing, at the rate of a small handful to a hill; plaster applied as soon as it comes up, table spoonful to a hill; lime, ashes and plaster mixed together, and put a small handful in the hill dropped with the potatoes to prevent their decay; cannot say this prevented the rot, but we have not lost a crop for four years; never lost but one. The corn showed the difference during the summer by its green look and thrifty growth; cannot state the difference at harvesting.

Tillage and Crops.

13. We have tilled the past year 40 acres, occupied with the following crops and quantity of each: wheat, 22½ acres; potatoes, 4½; corn, 3½; seeds, 3½; oats, 2½; barley, ½; carrots, 1; beets, ¾; onions, 1½.

14. The quantity of wheat sown per acre last season, was 1¾ bushels; we think two bushels little enough; sowed mostly Soules, and a little Mediterranean on low lands, and sowed from the 4th to the 19th of September; average product 20 bushels per acre. The above crop was all sown after other crops, viz: corn, potatoes, wheat and grass. The grass land, containing 6 acres, was plowed once in August, with a double team, (oxen and horses,) and harrowed soon after. The 5th of September began to cultivate it with wheel cultivator, commenced sowing the 6th, and cultivated in the seed, and finished sowing the 9th; after cultivating, the harrow was passed once over the field to smooth it; water furrows plowed once in seven or eight paces. The wire worm and June grass, injured this field very much, and at harvesting produced 15 bushels per acre. Twelve and a half acres were sown after wheat, plowed once the last of August and 1st of September, and a good crop of young clover plowed under; soon after it was harrowed and cultivated thoroughly and sown as above stated, produced 21 bushels per acre. We have often raised 30 bushels, but last fall was very dry, and it was sown too thinly, which lessened the crop 5 bushels per acre, at least; four acres were after hoed crops, plowed once, harrowed and cultivated thoroughly, produced at harvesting about 100 bushels, or 25 bushels per acre. One and a half acres of it was low ground, and produced only 22 bushels. Our wheat was all sown by hand, and harvested with a hand cradle, at the rate of 2½ acres per day, each man. We have been troubled some with the insect, which is found just above the first joint, near the ground, about one-eighth of an inch long and black, very much resembling a black lettuce seed; it causes the wheat to fall down before it is ripe, consequently not coming to full maturity, and thereby lessening the yield per acre. We never have found a remedy for the above described insect; we never have been troubled with smut;

sow our wheat dry and in dry weather, if possible; we never summer fallow, but keep our land in good order by manuring; our method is, usually, turn over sward, manure, plant corn or potatoes, sow one or two crops of wheat, seed for meadow, and let it remain for two or three years. Barley and oats, sow from 2½ to 3 bushels per acre; sow from the 15th of April till 10th of May; plow once, harrow and cultivate thoroughly. If the land is well plowed in the fall, sow barley without plowing again; we raise as few oats as possible; think them unprofitable, as well as injurious to the land; harvest with cradle, and thrash with machine; produce oats per acre, 40 bushels; barley, 30. We usually plant corn on sward land, but last season planted after corn on low land, second year after breaking up; soil, black muck and marl with a clay sub-soil; planted from the 15th of May to the 4th of June; planted three feet apart each way, from 4 to 6 kernels to a hill, 12 to 16 quarts per acre. Varieties, 8 rowed yellow, early Canada, sweet corn, and pop corn; cultivation, as soon as up sufficiently, pass through the rows with a cultivator, both ways; in a few days pass through again both ways and follow with hoe; after a few days more plow it out both ways, and hoe again. Harvested 2nd week in September, by cutting it up close to the ground, and put in small bunches, and let it stand a few days; hauled it off, stack it again on a piece of plowed ground, and let it stand till dry; commenced husking about the 1st of October, put up the stalks in small round stacks for winter; produced per acre fifty bushels shelled corn. Our potatoes are planted nearly in the same manner as corn, planting as early as possible; we planted this year the 26th of April, on green sward, plowed ten inches deep, and thoroughly harrowed, marked both ways with a plow, and planted in the furrow at the rate of ten bushels per acre, and two pieces in a hill and covered with hoes; after cultivation, same as corn; produce 100 bushels per acre; varieties; white purple, mercers, early june, early pink eyed, long Johns. This season the blight struck the vines about the 10th of August, and the potatoes commenced rotting at a fearful rate; we gave them up for lost; but about the 6th of September, the rotting ceased, but the vines continued dying until they were entirely dead. The cause we could not tell, we commenced digging them the 19th of September, and no decayed roots were found, or very few; those that were decayed, were all dried up, and nothing but skins left; some hills were entirely gone, nothing but skins left to show what they once were; the purple Mercer's were nearly half gone, but the remainder were sound and continued so. We think the crop was lessened full one-third by the premature decay; we never have found any sure remedy; early planting and using lime, ashes and plaster in the hill, being the best preventive.

Carrots: soil, light chestnut loam; cultivate the ground early in the spring, so that the weeds may start, then plow deep and make it smooth; sowed this year the 10th of May, in rows 14 inches apart, at the rate of four pounds of seed per acre; we mark our ground with a marker, making three rows at a time, sow with hand and cover with rake; as soon as they come up, hoe between the rows; in a few days hoe again and weed; in two weeks hoe again, weed and thin them from three to four inches in the rows, and keep them free from weeds the remainder of the season, and harvest the 1st of November; yield 728 bushels per acre. They were sown this year without manure, the ground was manured last season. Beets cultivated nearly in the same manner as carrots, produce 600 bushels per acre. Varieties: Mangle Wurtzel, White and Yellow sugar, Bassano, Long Blood, and Blood Turnip, raised on low land. Onions: variety, *English Potatoe*—cultivation, soil prepared by manuring, plowing, harrowing and raking; plow in beds 10 feet wide for convenience in tending; commence planting out as early as possible in the spring; plant in rows 14 inches wide, and 3 inches apart for small ones, and 6 inches for large; plant from 40 to 75 bushels per acre; begin to hoe when you can see the rows, and hoe them twice through and weed, then hoe again and weed, and the work is finished; commenced harvesting 9th of July and finished the 29th; produce 400 bushels per acre. Seeds; varieties, beets 6, lettuce 3, onions 2, squash 3, carrot and parsnip, and 2 varieties tomatoes. Soil prepared by manuring, plowing and harrowing thoroughly, then mark with a plow 4 feet apart; set out the roots with spade in the furrows, from 4 to 6 inches asunder; set out from the 15th of April to the 10th of May; work through them during the season with plow and cultivator and keep them clean from weeds; hoe three times and harvest as soon as ripe, which will be from the 1st of August till the 10th of September. Harvest different ways, but cut off close to the ground; expose it to the sun 3 or 4 days and pack it up under cover and let it sweat, then thrash it with hand flail and clean it with a common fanning mill; produce Beets from 800 to 1000 lbs per acre. Carrot and parsnip, cut off close to the head, make 3 or 4 cuttings, and dry under cover; produce, carrots 400, and parsnips 1000 lbs per acre. Lettuce, cut, dry, thrashed and cleaned with fanning mill, produce 200 lbs per acre. Onion, cut off the bolls, dry and thrash, clean with fanning mill, and sink in water so as to insure good seed. Squash, break open, take out the seed with a spoon, put them in a tub, and let them stand 2 or 3 days and ferment, then wash them out and dry in the sun; produce, 200 lbs per acre. Tomato, squeeze out the juice and seeds and work the same as with squash; produce 100 lbs per acre.

15. We prefer rotted manure for wheat and all root crops, at the rate of from twenty to forty loads per acre; onions and seeds requiring the greater quantity. We usually manure the previous crop to wheat and not manure the wheat; we apply it both spring and fall, prefer plowing under in the fall; apply it by spreading evenly over the ground, and plowing under the common depth, from seven to ten inches. For corn and other crops on low ground, we prefer long, unfermented manure, well covered with the plow.

16. Answered above. 17. Answered in No. 14 on potatoes.

GRASS LANDS, &c.,

18. We use timothy and clover; sow ten pounds clover, or eight quarts timothy and two pounds clover per acre; sow timothy with wheat, and before the last harrowing, sow clover in April; seed mostly after wheat, sometimes after barley and oats. Red and white clover mixed with timothy, we consider the best for pasture.

19. We mowed this season nine and a half acres, usually twice that number, produce this year, two tons per acre. We cut timothy soon after the blossom begins to turn; make it one day and cock it over night, turn it out the next day, dry, and haul it to the barn. Clover is cut the last of June and the first of July, and made same as timothy The revolving horse rake is used to gather the hay; sometimes use a little salt on the mow.

20. Some of our meadow lands are too low for raising wheat; these, soon as the grass begins to fail, we break up in the spring, manure and plant corn, then plow again in the fall, sow to oats or barley next spring, and seed for meadow. We consider it unprofitable to till low lands, they are more profitable in, and better adapted to grass; we never plow them unless it is necessary to make them produce well.

21. Have never practiced irrigating or watering meadows or other lands. 22. Have no bog or peat lands on the farm. 23. Have usually succeeded in eradicating weeds by thorough cultivation; knotgrass or orchard grass is the worst enemy, this will spring up, grow and seed, after the second time hoeing; the only way to get rid of it is by weeding, or seed the ground for meadow.

DOMESTIC ANIMALS.

24. Have kept the past season five cows, four horses and one colt; they are of the native breed, good animals and in good condition. 25. Have not experimented with the different breeds of cattle or other animals.

26. We consider the best and cheapest mode of wintering our cattle is: 1st, house them nights and stormy days; 2d, keep them well littered with straw; 3d, feed on beets, carrots and turnips, and corn stalks as long as they last, and then feed hay. Feed cows half bushel roots per day, and let them run in the yard during the day, where there is a good well of water and plenty of straw in stack. Stock eat less and thrive better for keeping them

warm, less food is required to keep up the animal heat, and consequently less food to keep them in thriving condition. Every farmer ought to calculate the quantity of stock that he can keep well and keep no more; nothing is lost by feeding well; we find roots to be good and cheap food for cattle and horses. Have raised this season, 600 bushels turnips, after onions, barley, potatoes and wheat; sowed the 6th and 7th of August, hoed once, and yielded 200 bushels per acre; cost about four cents per bushel; beets and carrots raised at a cost of six or seven cents per bushel.

27. Make butter for the family's use, sell some milk and some butter, but these are not counted in with the farm account; find it profitable to keep as little stock as possible, and turn the pasture lands to meadow and tillage.

28 & 29. No sheep are kept, being so near the city the dogs destroy the flock.

30. We kept six swine this year, of the Byfield and Leicestershire breed; feed them on slops from the house mixed with meal during the summer, let them have the run of the orchard till the apples begin to fall; then shut them up and feed them on meal and corn all they will eat clean; give them swill once a day for drink; slaughtered four pigs, nine months old, averaging 217 pounds each, and salted for family use; one aged, weighed 310 lbs., and one kept over for breeding; we think spring pigs the most profitable to fat, requiring very little to keep them in the forepart of the season, and no more the latter part; they will weigh nearly as much as hogs that have been wintered.

31. Feed no potatoes, have fattened some beef on turnips; think them more than equal to indian meal, in proportion to the gain of the beef and the cost of the meal; have feed some beets, and think them about equal to turnips for beef, and better for milk; to prevent the milk from tasting of turnips, cut off the tap root before you feed them; carrots are the best roots for beef or for milk; they do not give the greatest quantity, but its of good

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, and many other varieties.

, Cherries, Apricots, Pears, Nectarines and
ther varieties. Peach trees number four hun-
d the best *Peaches* are Crawford's Early and Late,
estone and Cling, Red Melocoton, Golden Rareripe,
e, Snow, White Imperial, Sweet water, Early Purple,
Mammoth, Golden Empire, Heath Cling, Bergen's Yel-
Early Slocum, and many other varieties. The best va-
of *Plums* are Bolmar's Washington, Red and Yellow Egg,
e's Imperial Gage, Sugar and Damson Plums. *Quinces*, Or-
variety. *Cherries*, among the best are Napoleon Bigarreau,
llow Spanish, Baumann's May, Black Tartarian, Early Purple,
olland and Black Bigarreau, Elton, Downer's Late Red, Downton,
lack Eagle, Burr's Seedling and White Heart, most of them good
bearers and fine fruit. *Apricots*, Large Peach. *Nectarines*, Bos-
ton and Elruge. *Pears*, Virgalieu, Louise Bonne, Bartlett, Swan's
Orange and Steven's Genesee. Strawberries, Currants and Rasp
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may be dug out with a knife, or a wire made for the p
Black-smith's cinders applied around the trees, at the rate of
quarts to a tree, is said to be a preventive. The orchards are cultivated with hoed crops, well manured, and well trimmed, which keeps them thrifty, and they generally produce well. Our usual time for pruning is March and April, using the saw and knife.

Fences, Buildings, &c.

37. The farm buildings are eight in number; three barns, three dwellings, and two sheds; two large hay and grain barns, thirty by forty feet; under one of them is a root cellar, 28 by 30 feet, for storing roots during winter, and stables for cattle and thrashing floors in both barns; also a large and well finished granary, capable of holding 600 bushels, and mouse tight. Horse barn 24 by 28 feet, with stalls and mangers for eight horses, and room for feed, harness, &c., below, and a hay loft that will hold four or five tons, built of hemlock and covered with pine matched boards, and painted, and cost 200 dollars. The wagon and tool shed is 14 by

quality, and the cows are kept in good condition; never feed meal much to milch cows, think it has a tendency to dry them up; find coarse middlings to be good and cheap feed for cows giving milk, feed one-half bushel per day. Our horses are kept on cut straw and hay, mixed with one-half bushel of coarse middlings, per day, per horse; feed two bushels of the cut feed to each.

FRUIT.

32. Our apple trees number three hundred and seventy-five in all; one hundred and fifty full grown; one hundred and twenty-five commenced bearing a little, and the remainder small; they are all grafted fruit of the most approved varieties, viz: Northern Spy, Red Canada, Norton's Melon, Wagener, Fameuse, Rambo, Hawley, Early Joe, Hubbardston Nonsuch, St. Lawrence, Kingsley, Lowell, Peck's Pleasant, Genesee Chief, Gravenstien, Holland Pippin, Belmont, Red Astrachan, Sweet Bough, Fall Juneating, Sweet Pearmain, Tallman Sweet, Roxbury English, and Golden Russet, Swaar, Pomme Grise, Seek-no-further, Red Cheek Pippin, Newtown Pippin, 20 oz. apple, and many other varieties.

33. Peaches, Plums, Cherries, Apricots, Pears, Nectarines and Quinces, are the other varieties. Peach trees number four hundred and sixty, and the best *Peaches* are Crawford's Early and Late, Old Mixon, Freestone and Cling, Red Melocoton, Golden Rareripe, Morris White, Snow, White Imperial, Sweet water, Early Purple, Cooper's Mammoth, Golden Empire, Heath Cling, Bergen's Yellow and Early Slocum, and many other varieties. The best varieties of *Plums* are Bolmar's Washington, Red and Yellow Egg, Prince's Imperial Gage, Sugar and Damson Plums. *Quinces*, Orange variety. *Cherries*, among the best are Napoleon Bigarreau, Yellow Spanish, Baumann's May, Black Tartarian, Early Purple, Holland and Black Bigarreau, Elton, Downer's Late Red, Downton, Black Eagle, Burr's Seedling and White Heart, most of them good bearers and fine fruit. *Apricots*, Large Peach. *Nectarines*, Boston and Elruge. *Pears*, Virgalieu, Louise Bonne, Bartlett, Swan's Orange and Steven's Genesee. Strawberries, Currants and Rasp berries in abundance for family use, and some to sell.

34. The caterpillar attacks the trees in the spring; destroy their nests two or three times a year, by taking them from the trees with the hand or pole, and stamp them to death on the ground. The Curculio attacks the smooth skinned fruits, and causes them to fall, when half grown; most farmers are familiar with the insect, and its mode of attack; it commences as soon as the fruit is set, and continues its ravages for two weeks or more. Various methods of exterminating them have been tried; some shake the trees every morning, and catch them on sheets; some cover the ground with salt, &c. We have used unfermented horse manure with good success, by putting it around the roots of plum trees, two feet square, before the fruit begins to show, and have had abundant crops. Slugs, on the leaves of cherry trees in July, are easily exterminated by sifting ashes on them, while the dew is on in the morning. The peach worm has not troubled us to any extent; it makes its appearance just below the surface of the ground, in the body of the peach tree; if there, the gum will start out, and it may be dug out with a knife, or a wire made for the purpose. Black-smith's cinders applied around the trees, at the rate of four quarts to a tree, is said to be a preventive. The orchards are cultivated with hoed crops, well manured, and well trimmed, which keeps them thrifty, and they generally produce well. Our usual time for pruning is March and April, using the saw and knife.

FENCES, BUILDINGS, &c.

37. The farm buildings are eight in number; three barns, three dwellings, and two sheds; two large hay and grain barns, thirty by forty feet; under one of them is a root cellar, 28 by 30 feet, for storing roots during winter, and stables for cattle and thrashing floors in both barns; also a large and well finished granary, capable of holding 600 bushels, and mouse tight. Horse barn 24 by 28 feet, with stalls and mangers for eight horses, and room for feed, harness, &c., below, and a hay loft that will hold four or five tons, built of hemlock and covered with pine matched boards, and painted, and cost 200 dollars. The wagon and tool shed is 14 by

40 feet, covered with matched boards, used for housing wagons and tools, and will hold five wagons; having doors in front it may be shut tight from the sun and weather. Tenant house 20 by 24 feet, with two rooms, bed room and buttery below, and chamber used for storing seeds, corn, &c., cost about 150 dollars. Wood dwelling, main part, 18 by 24, two stories high, divided into two square rooms, hall and three clothes presses below, and two square chambers, hall, and four presses above; kitchen 20 by 24 feet, with bed room and buttery below, and three sleeping rooms above; wood house attached, 18 by 28 feet, with an open chamber above, used for store room; cost of house and wood shed 1,000 dollars. Brick dwelling 23 by 31 feet, two stories high; main part, two square rooms, hall, bed room, buttery and clothes press below; five sleeping rooms and hall above. Kitchen and wood room 18 by 20 feet, and chamber above used for store room, cost 1,400 dollars. The above buildings are in good repair, and the wood ones, (except two barns) well painted.

38. The fences on the farm are of six kinds: stone wall, rail fence, straight board, nice picket, high picket and common. There are sixty-eight rods of stone wall on the farm, four and a half feet high, and stones enough hauled for the same quantity, ready to be laid up. The wall is built tapering from the bottom to the top, the bottom is laid three feet wide and where the ground is low a trench is dug about one foot deep, and filled in with small stones for the foundation, which serves a double purpose, a ditch, and prevents the frost from heaving the wall; after it is laid, bank a little on both sides, cost of wall $1.00 per rod; 100 rods picket fence, six feet high, around peach orchard, built of hemlock pickets and rails, with red cedar and white oak posts, cost $2.00 per rod. Forty rods nice picket fence around the dwellings, built of pine and chestnut pickets, pine, hemlock and chestnut rails, and red cedar and oak posts, well painted and cost $5.00 per rod. Fifty rods common picket, four and a half feet high, built of pine, hemlock and chestnut at a cost of $1.50 per rod. Sixty-five rods common straight board fence, five boards high, cedar and chestnut posts, cost $1.00 per rod. Six hundred and twenty-five rods Vir-

ginia rail fence, seven and eight rails high, mostly chestnut rails; 160 rods of this is staked and capped with wire, (No. 10 used,) heavy rails put on the top; part of the remainder is staked in the common way; crossing and rails on the top; cost of rail fence 75 cents per rod. The above fence is mostly in good repair. There are on the farm eight good gates, at an average cost of $4.00 each; no wire fence has been built on the farm.

39. All that is sold from the farm is weighed or measured, and accounts kept; of the produce that is consumed by the family, teams and stock, no account is kept. Every day's work of every hand is registered at night, so that by turning to the register it can be seen what was done any day of the year. Also notes are made relating to the weather, and any thing that may be interesting for future reference.

40. We keep a regular account of the receipts and expenditures of the farm so that at the close of the year we can strike the balance and show the gain or loss by the year's transactions; we pay cash, sell for cash, and have no account at the stores; do not keep account with every crop, but do with some; think it would be well to keep Dr. and Cr. with every crop.

Expenses of Farm.

Five months work at $18.00,	$90	00
Four and a half months work, at $12.00,	54	00
Board 4½ do 6.00,	26	00
One man by the day at 6s.,	133	50
Extra day labor,	199	60
Thrashing oats, barley and wheat,	23	55
Blacksmith's bill, new tools and plow points,	35	63
491 bushels coarse middlings,	59	57
Peach baskets, cloth, twine, &c.,	29	28
13 bushels potatoes,	6	50
½ do red onions,		31
3 do oats,	1	25
4 do beets,	1	00

400 Tomato plants,	$2	00
4 lbs. Carrot seed,	3	00
Clover and timothy seed,	4	30
Seed wheat, 12 bushels,	12	00
Garden seeds,		91
Manure,	25	00
Town and county taxes,	32	61
Insurance in Mutual on $4,050 per year,	10	00
Highway taxes, 13½ days,	8	44
Papers, religious, agricultural and political,	11	75
Interest on farm at $10,000,	700	00
Total amount of expenses for the year,	$1,470	17

Our hands all board themselves, except the one noted.

RECEIPTS OF FARM.

402$\frac{40}{60}$ lbs. wheat, (Soule's,) *a* 96 cts.,	$386	51
20$\frac{48}{60}$ lbs. Mediterranean, 7*s*.,	18	19
Onions sold from 4*s*. to 6*s*. per bushel,	214	40
Peaches sold, average 8*s*. per basket,	460	13
Apples sold, 8*s*. per barrel,	136	94
Do on hand and for sale, estimated,	25	00
Hay sold, from $8 to $10 per ton,	106	80
9 bbls. cider sold,	11	25
Turnips sold, *a* 10 cts.,	54	49
Carrots sold, *a* 15 cts. and 1*s*. 6*d*.,	54	39
Pasturing cows and keeping horses,	67	77
Potatoes sold *a* 4*s*.,	61	57
Do on hand for sale,	100	00
Barley sold *a* 5*s*.,	9	27
Seeds sold to J. Rapaljee & Co.,	572	00
80 bushels seed onions on hand for sale *a* 10*s*.,	100	00
One hog sold,	17	00
Two calves sold,	12	00
Sweet corn, sold green,	16	38
Cabbage sold,	23	44
Squashes do	14	48

Scions sold,	$12 00
Straw sold,	9 60
Lettuce and tomatoes,	48
Seed corn,	8 75
100 bushels ears corn, estimated,	25 00
Quinces sold,	20 00
Strawberries and currants sold,	20 00
Two calves on hand worth,	10 00
One colt, do do	25 00
Profit on fat cow,	5 00
Roots on hand worth	40 00
Growth of one hog,	5 00
Seed on hand,	7 00
20 loads of straw to sell,	40 00
40 bushels oats on hand *a* 33 cts.,	13 20
One ton of hay,	10 00
Cabbage plants sold,	3 75
Cherries and plums sold,	10 00
Total receipts,	$2,726 79
Deduct expenses,	1,470 17
Net profit of the farm,	$1,256 82

being $18.48 cts. per acre for all of the improved land, after paying all the expenses and interest.

In the preceding account, nothing has been charged for butter, milk, pork, eggs, chickens, wheat, corn, fruit and vegetables of all kinds, fire wood sufficient for two families; also, eggs, butter and milk, sold, amounting at least to eighty dollars. Nothing is charged for keeping cows and fowls, being kept from the farm's produce; other things used in family, as pork, wheat, vegetables and fruit, would amount at least to two hundred dollars; on the other hand, nothing is charged for time of self, and wear and tear of tools; nothing is estimated that will be necessary to keep the stock till the 1st of April, which ends the year; we have seed enough of most kinds, to seed the farm this coming year, not included in the account.

Our expense for manure, is less than it has been for the last four year; we have paid as high as $90 per year, aside from hauling.

We have endeavored to answer the questions proposed by the Society, according to the best of our abilities; and hope the committee will, in examining this imperfect report, make such comments as they may think will lead us, and farmers generally, to a more thorough and scientific course of farming.

All of which is respectfully submitted.

(Signed) EDWIN S. HAYWARD,
N. HAYWARD.

Dated at Brighton, January 7th, 1852.

STATE OF NEW-YORK, } ss.
Monroe County, }

Nathaniel Hayward, and Edwin S. Hayward, being severally sworn, depose and say, that the within statements by them subscribed, are true according to the best of their knowledge and belief.

EDWIN S. HAYWARD,
NATHANIEL HAYWARD.

Sworn and subscribed before me, }
this 8th day of January, 1852, }

D. WENTWORTH, *Justice of the Peace.*

CANTONMENT FARM, GREENBUSH, RENSSELAER COUNTY.

Report of McCulloch & Kirtland.

We respectfully answer the questions required by the Society, as follows:

1. The farm consists of one hundred and thirty acres, all improved, no wood land.

2. The face of the farm is partly undulating and partly flat; the soil of the former portion, is a sandy loam, sub-soil rather porous; the latter a clay loam, sub-soil clay, no limestone on the farm, rock, slate.

3. The mode we now adopt to improve our clay soil, is as fol-

lows: plow in the fall, or rather under drain, if at all liable to retain surface water, then plow, say seven inches deep, (we are now using one of French's Michigan sub-soil plows, with much satisfaction,) in the spring manure liberally, and plow just deep enough to cover the manure, put in a hoed crop, and if the crop is got off in the fall early enough, plow it again deep, and in the spring, put in a summer grain crop; after harvest, the sooner the better, plow under the stubble, and at the proper time, sow with wheat and grass seed; the clay part of the farm is laid out in ten acre lots, with open ditches on three sides of each lot; we plow in nine yard lands, and sub-soil the dead furrows.

4. We seldom plow less than seven inches, as we have no light soil; we plow deep invariably.

5. Have made no experiments to test the difference between deep and shallow plowing.

6. Have used the sub-soil plow, on our clay sub-soil, with much advantage; have not discovered any advantage on loose soil.

7. The trees, indigenous to the soil, are oaks of the different varieties, white and yellow pine, hickory, soft maple, elm, white and black thorn, wild gooseberry; plants; white, red, black trefoil, and other varieties of clover; blue grass, summer grass, timothy, red top, couch grass, chick weed, common and Canada thistle, snap-dragon, lobelia, &c.

8. We never apply less than twenty-five loads or yards of manure to the acre, most commonly a mixture of straw, muck and stable manure in half rotted state: it is not kept under cover; we have no cellars for receiving it; our yards are formed to retain as much as possible of the drainage.

9. Our means for making manures, are forty-five head of cattle, four horses, and from eight to ten hogs, hen house, ash pit, and a muck bed; we shall make this year about 1000 loads; we dig out the muck and let it lie exposed to the air and frost a year, before we use it at all; we find it mixed with lime, a very good top dressing for our meadows, we apply all we make yearly.

10. For corn, we prefer unfermented; for potatoes, we don't use any; believe they are more subject to disease, on freshly manured land; if applied directly to a grain crop, should use it after

fermented; on grasslands, sufficiently rotted to spread well; we are of late, favoring the practice of keeping the manure as near the surface as possible, avoiding exposure to the sun.

11. Could not advantageously increase our supply of manure.

12. Have used lime, plaster, bone dust, salt, poudrette, fish guano, guano, phosphate of lime, ashes, &c., they are all undoubtedly more or less beneficial; from the use of plaster, lime and ashes we have discovered benefit, but from the other kinds named above, either from ignorance of application, or some cause, we have not discovered benefits sufficient to continue their application.

13. Our tillage crops are not very large this year, we had nine acres of wheat, eight acres of corn, five acres of potatoes; the wheat was in two different lots, and under a different cultivation, five acres was after corn the year previous, the lot was rather low land, and season uncommonly wet, so much so that it was preferred letting it lie to working it when too wet for a spring crop; as the season advanced plowed it deep, put on 25 loads of manure (well rotted) to an acre, harrowed it well, and let it lie until the 15th of September, when it was sowed with Mediterranean wheat, two bushels to the acre, and covered with a gang plow; sowed it with grass seed, half a bushel timothy, and half a bushel of red top to an acre, and rolled it in; harvested the 14th of July, produce 30 bushels to the acre; the other lot of wheat was sown after oats about the 20th of September, with the Hutchinson variety, two bushels to the acre, harvested the 20th of July, produce 25 bushels to the acre; endeavor to cut wheat just as the berry is leaving its doughy state; the above crops are not large, but are quite encouraging in this section of the State, as for the last few years the wheat crop has been almost a total failure on account of the midge. Barley and oats we sow as early in the spring as the land can be put in order; barley we sow two and a half bushels to the acre, usually the four rowed variety; produce 30 bushels to the acre; oats we sow thick, have sown five bushels to the acre, produce from 50 to 75 bushels to the acre. Corn we prefer on a two year old clover sod, this year we succeeded well on one lot after the following manner of tillage: early in April carted on 30 loads to the acre, of manure fresh from the barn yard, and

spread it to give the clover a start, and it did start, for when we plowed it about the 15th of April, it was nearly knee high; succeeded in plowing it all under with the Michigan plow, without stopping the team from one side of the lot to the other, completely covering all vegetable matter; harrowed and marked out with a light plow, three feet apart each way; planted on the 28th of May; dropped by hand, not less than four kernels in a hill; covered lightly; came up well; when just out of the ground applied a handful of ashes and plaster mixed, to each, ran the cultivator through as soon as the rows could be well seen, hand hoed and cleaned thorougly; on the second working thinned it to three and four stalks to the hill; grew well and stood the drought of the season well, owing I think, to the deep plowing under of the clover and long manure, produce 75 bushels to the acre.

14, 15, 16. Answered in foregoing interrogatories.

17. Potatoes have been very much affected with the common disease, but not as much this year as formerly: have tried on sod, on old land with manure and without manure, planted early and late, cut and whole, and all heretofore shared the same fate. Mercers we found the most delicate, and long John's the most hardy this year from some unknown cause. The crop has done better this last season; planted cut tubers, three pieces in the hill; planted Mercer's, Mountain Junes, long John's and flesh color; long John's most hardy, and yield decidedly the best, say on an average 150 bushels to the acre; have not discovered any cause or found any remedy for the disease.

18. We use timothy and red top for hay, clover more particularly for improving the soil; sow half a bushel each of timothy and red top and ten pounds of clover seed to the acre; sow timothy and red top in the fall, clover in the spring.

19. Mow about 50 acres; product 1½ tons to the acre; cut timothy when in full blow, or rather commence cutting and cut as fast as possible; don't like to have the seed get hard before it is cut; as much grass as is cut through the day we let lie until the next, unless we can get it into cock before night; avoid exposure to the sun and dew as much as possible; open it as little as possi-

ble, put in small cocks, double them and turn them together bottom side up. Hay cured as much as possible in the cock is decidedly better in every respect to that cured by too much shaking about. Clover, if fortunate in curing, we like very much for milch cows; we never turn clover out at all; put it up the next day after it is cut in small grass cocks, next day double them and so on until it is fit to put in the mow. We salt all our hay at the rate of half a peck to the ton.

20. We have not any mowing lands unsuitable for the plow.

21. Have not practiced irrigation or watering meadows.

22. Have not reclaimed any bog or peat lands, but a great part of the farm has been reclaimed from a sterile cold wet soil since it has been under the management of its present owner. Under draining, deep plowing and manure have had the desired effect.

23. Have 38 cows, 4 heifers, 1 bull, 1 yoke of oxen and 4 horses; bull half breed Ayrshire, cows, Durham, grades and natives.

24. Have not made experiments to show the relative value of the different breeds, but have observed sufficiently to satisfy ourselves that the Durham and native grade are better for the dairy than full blood, and full blood best for fattening. We are now trying the Ayrshire grade.

25. Consider the best and cheapest manner of wintering cattle as follows: as soon as frosty nights commence, hard enough to kill vegetation, stable them nights, and if cold storms occur feed them; our stables are parted into stalls six feet wide, two cows in each stall, a row on each side of the building, with their heads towards the middle, an alley way through center for feeding, when winter sets in we feed them all they will eat up clean; we sometimes cut our hay mixed with straw and stalks, which is a great saving and undoubtedly pays for the extra labor; we feed one bushel of brewer's grains to each cow per day, that is in milk; the cows are turned into the yard in the middle of day for exercise and drink; have raised carrots and turnips for feed; like carrots very much for horses and cows, but they will not produce as much milk as brewer's grains, and when we can get grains for five cents per bushel, they are the cheapest food we can feed.

26. Make no butter or cheese, sell the milk in Albany.

27. Do not keep sheep. 29. Keep from eight to ten hogs, pasture them in summer and give them the slop of the kitchen, have not been particular about the breed; fatten on corn and kill when twelve to fourteen months old, weigh about 200 pounds; have now a pair of Suffolk to try them.

30. Have made no experiments to show the relative value of potatoes, turnips and other root crops, compared with Indian corn or other grain, for feeding animals for fattening or for milk.

31. Have some 200 apple trees, all grafted, Greening, Spitzenburgh, Swaar, Newtown pippin, Alexander, Seek-no-further, Baldwin, Russett, Jersey sweeting, Red Astrachan, and Juneating.

32. Several varieties of cherries, plums, pears and peaches; the black variety of cherry and the gage plum, are the best of their kind; pears have been for the last few years very much subject to the blight, peaches are almost too uncertain, particularly in this section, to warrant much attention.

33. The caterpillar is somewhat troublesome on the apple trees in the spring, an oiled sponge on pole, will soon remove them by rubbing it through their nests; the curculio is very troublesome, not only to the plum, but the cherry and apple suffer by them, have not discovered any remedy for them, the most successful mode we have tried is jarring them off on to a sheet, in the morning when they are a little stiff and it is damp, and be sure and kill them.

34. Our general management of fruit trees, is to cultivate a young tree as you would a hill of corn; manure it and keep the soil loose around it, wash the bodies with soft soap and lime; prune them in a way that they will not shoot up too high, and in a way that the trunks will not be too much exposed to the sun.

35. The buildings were not built expressly for farm buildings, but have been altered so that they are quite convenient; one dwelling, three barns, cow stable, hog-house, wood-house and smoke-house.

36. Our fences are all post and board; red cedar and chestnut posts, and hemlock boards; cost seventy-five cents per pannel, and are in good condition.

37. Our fields are all surveyed; they are manured, as circumstances call for, observations made on the different modes of tillage,

the crops weighed or measured, the seed sown by weight or measure.

38. Keep daily accounts, can state the annual expense in improving the farm.

Farm Account.

DR.

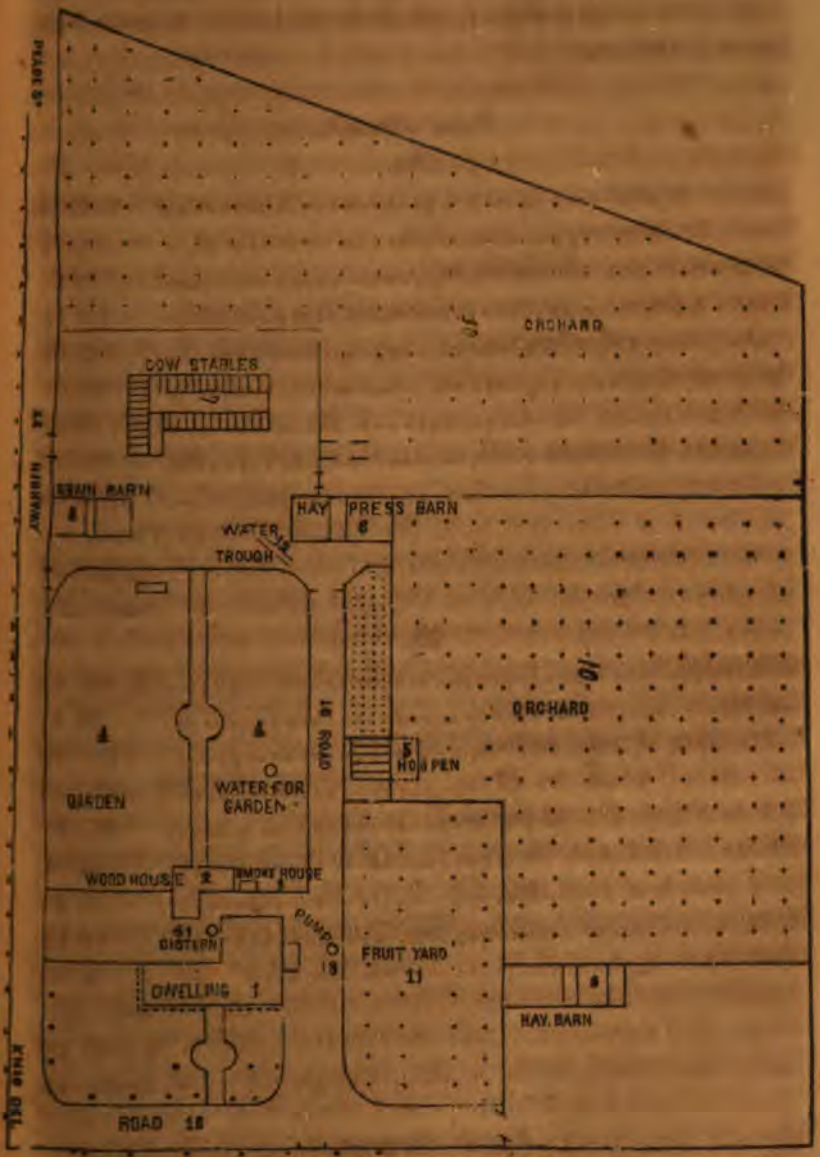
Paid for labor,	$587 50
Board for laborers,	260 00
Black-smith and wheel-wright,	79 00
Brewer's grain,	300 00
Plaster, lime and ashes,	43 00
Fence repairs,	50 00
Ferriage,	40 00
Taxes and insurance,	50 00
Profit and loss ac't,	1,948 62
	$3,358 12

CR.

Milk sold,	$2,006 00
Calves,	32 00
450 bushels of corn, at 60c.,	270 00
245 do. wheat, $1.12,	275 62
35 tons of hay, $10.50 per ton,	367 50
450 bushels potatoes, 62c.,	225 00
1,200 pounds of pork, $6,	72 00
Fruit,	60 00
Poultry and eggs,	50 00
	$3,358 12

Key to Diagram.

No. 1 is dwelling house, 30 by 19, two stories high, with basement, and a double piazza, the whole length of the house. No. 2, wood-house; No. 3, brick smoke and ash-house; No. 4 garden; No. 5, hog-house, 40 by 15, divided into 5 pens for 5 hogs each,



McCULLOCH & KIRTLAND'S FARM BUILDINGS.

with a vegetable boiler in one end, a vegetable cellar below, and corn loft above; No. 6, hay-press barn; No. 7, cow stable, with large hay loft above; No. 8, grain barn, with cellar under the whole of it for vegetables; No. 9, hay-barn and carriage house; No. 12, water trough, water brought a quarter of a mile, by a hydraulic ram 60 feet below the level of the buildings; No. 13, pump; No. 14, cistern; No. 15, water for the garden; No. 10, orchard; No. 11, fruit yard; No. 16, road.

Personally appeared before me, B. B. Kirtland, and being sworn, says, the contents of the above statement are true, according to his belief.

B. B. KIRTLAND.

Sworn before me, this 22d
day of January, 1822,

GEORGE LAGRANGE, *Commissioner of Deeds.*

ALBERT G. FORD'S FARM.

Fairfield, Herkimer County.

SOILS, &c.

1. My farm consists of 130 acres, 25 in wood land, 10 waste land, 95 improved.

2. The soil on the hilly portion of my farm is black muck resting on black slate; the more level part consists of a dark gravelly and I might say some spots rather loamy soil, resting on a lightish colored marl; no lime stone on my farm; rocks grey flint, roundish in shape.

3. I treat the different soils much in the same manner. When any portion of my grass land does not produce well I plow it up, manure it well and plant it with corn, the next season sow it with oats or barley and seed it with timothy and clover.

4. Plow eight inches in depth. I think deep plowing a first rate operation on any soil.

5. I have made no experiment to test the difference in a succeeding crop between shallow, common, or deep plowing.

6. I have not used the sub-soil plow; there is no part of my land that requires draining.

7. Beech, maple, birch, elms, red and white, white ash, basswood, butternut, hemlock, milk weed, thistle, mullein, wild turnip and poke weed are indigenous to my soil.

MANURES.

8. Put about twenty loads to the acre, (thirty bushels per load.) I draw out the principal part of my manure in the winter as fast as it is made, laying it on newly seeded grass lands as soon as it is thawed in the spring; spread it evenly on the ground, then take a heavy bush and give it a thorough bushing, which will pulverize the manure and work it in among the grass roots, and leave the surface perfectly smooth and even. There is no cellar under my barn.

9. I have no means of making manure except what is made by the stock kept on the place, and by throwing out coarse fodder during the winter into the barn-yard, which I have scraped up into piles during the spring. I make two hundred loads yearly, and apply the same.

10. I refer to the answer to the eighth question for a part of the answer to this. As I till but a few acres I put the largest part of my manure on grasslands; I prefer using it in a fresh state for grasslands.

11. I think I could increase my supply of manure by a little extra labor.

12. I use plaster, but no lime, guano, or salt; I sow about two bushels to the acre; sow it with a machine made expressly for the business. The result of sowing plaster is: I get first rate fresh and tender feed for cows during the whole season; I think I keep one fourth more stock than I could if I did not use it.

TILLAGE CROPS.

13. I till from four to six acres usually; the one-half is planted with corn and potatoes, and the remainder sown with oats or barley.

14. Corn: ¼ bushel is sufficient to plant one acre; I plant in rows three feet by 3½, from 4 to 6 kernels in a hill; plant the middle of May, if the season will admit; manure it in the hill with hog manure; weed it as soon as it up sufficiently to follow the rows with a cultivator; three or four weeks after give it a hilling. As soon as it is sufficiently matured, cut it up and put it into shocks, say 16 to 20 hills to the shock, let it stand 3 or 4 four weeks, then draw to the barn for husking; corn managed in this way will produce from fifty to eighty bushels per acre; I have raised eighty-four bushels to the acre; last season was a very poor season for raising corn. Oats: sow 2½ to 3 bushels to the acre, sow the first of May; usual product 50 bushels per acre. My crops have not been injured by insects; I can give no estimate of fertilizing matter, taken from the soil by one acre of wheat, as I raise none.

15. I prefer hog manure for corn, one shovel full is sufficient for two or three hills.

16. I should prefer shallow plowing in manure, for any grain crop except corn, on my land; when I manure plow-land, I frequently spread it on the surface, and harrow it in with the soil, and with first rate success.

17. My potatoes have been affected for several years past, with what is called the potato rot; I have not been able to discover the cause or found any remedy.

Grass Lands, &c.

18. I use timothy and clover; sow 12 quarts timothy and four pounds of clover to the acre; I sow in the spring, at the time of sowing other spring grain; harrow the ground once over after sowing the seed, then roll it with a roller; I think timothy and clover are the best for dairy purposes.

19. Mow from thirty to thirty-three acres; for three seasons the average crop has been from two to three tons per acre; cut as soon as it is in the blow, when the weather is fair, what is mown in the forenoon spread out evenly on the ground, and before the dew falls, it is raked up and put into cocks; the next day it is spread out again, turned before dinner; in the afternoon it is taken to the barn. I frequently cut two crops of grass in one season,

on land that has been newly seeded and highly manured; I cut some this season, that would turn from one and a half to two tons per acre.

20. My mowing land is all suitable for the plow; when any portion does not produce well, I plow it up, take two crops and seed it again.

21. I have not practiced watering meadow or other land; for two or three years past, we have had plenty of water, and sometimes almost too much for the good of the crop, without irrigating.

22. I have no low, bog or peat lands.

23. I have not succeeded in destroying the weeds from my farm, we have a great variety in this section, the Canada thistle is one of the worst that I have to contend with; I have desdestroyed several patches of them by cutting them off two inches below the surface of the ground, once a month from June till October; I cut all noxious weeds, before they become mature enough to seed.

DOMESTIC ANIMALS.

24. I keep thirty cows, four yearling heifers, six spring calves, one span of three year old geldings that have done the farm work since last spring, the stock is all native breed.

25. I have made no experiments to show the relative value of different breeds of cattle for dairying, I think the native breed quite as good if not superior to any other breed that I am acquainted with.

26. I stable my cattle during the winter and feed nothing but hay; stables should be made warm, my stable floors are fixed with a drop, so that when the cows lie down they are kept perfectly dry; they should have plenty of water to go to, this is the cheapest way to winter cattle in this section.

24. For two seasons past I have made about 20,000 lbs of cheese annually, last year it exceeded that amount, this year it will fall a little short; make between four and five hundred pounds of butter to sell, besides what is used in the family; milk thirty cows, one two year old heifer included in the number.

Mode of Manufacture of Cheese.—The night's milking is strained in the cheese tub, when the weather is warm, a part is dipped up into pans, a tin cooler filled with cold water is placed in the tub and is kept there till the water becomes warm, when it is removed in the morning what cream there is taken off the morning's milk is strained into the tub and a part of the night's milk is warmed so as to raise the temperature in the tub to 80°, the rennet is then put in and the milk is well stirred, the tub should be covered up; it then stands 45 minutes, it sometimes takes one hour to curdle the milk, the curd is then broken up with a curd braker, it should stand a few minutes to settle, we then dip off a few pans of whey and put it a heating, the curd in the tub is then broken up again with the hand, then whey off again, keep on with the operation until the curd is worked sufficiently fine for the first scalded whey; the first whey is warmed to 110 degreees, it is then dipped out and put on the curd; the curd should be stirred while the whey is dipped on; we then dip off another cooler full and heat for scalding the last time; the last whey is heated so as to raise the temperature in the tub to 98 degrees; the curd should remain and scald till it will squeak well when it is taken between the teeth and chewed; when the weather is warm, after the curd is scalded sufficiently, we dip off most of the whey in the tub, and then put three or four pails of cooling whey in with the curd; the curd is then dipped in a sink for draining; the curd should be well stirred, to keep it from adhering; when it has done draining, we put one gill of salt to 18 pounds of curd; the curd is put into the hoop and well pressed for 24 hours; the cream taken off the milk in the morning, is made into butter, except a short time in the warmest part of the season.

28 & 29. I keep no sheep.

30. I usually winter from four to six hogs; they are a cross on the Berkshire and Snowball breed. In winter I keep a tub in my cellar, put the slops of the kitchen and shorts into it, and in this way I winter my hogs very cheap; when we commence making cheese, feed them the whey, and a few shorts, say one-half bushel per day for what hogs and pigs I keep; I keep my hogs till they are about

eighteen months old; I feed a few busnels of corn meal some four weeks before killing time; my hogs weighed from three to 460 pounds this year; I fatted six spring pigs this year, they weighed from 200 to 250 pounds each; I fed only 20 bushels of corn meal to the whole lot.

31. Made no experiments on root crops to show the relative value for feeding stock.

FRUIT.

32. I have about 140 apple trees, 120 grafted fruit, 20 natural fruit—Russett, Greening, Spitzenburgh, Gilliflower, Pound Sweet, Roxbury Russet. My apple trees are very old; the most of them have been set out from forty to fifty years; they bear very well yet the most of them.

33. Six Egg Plum trees, four do Green Gage, two Early Bell Pear trees. Egg Plums the best, I have frequently sold six dollars worth from one tree.

34. My trees have not been troubled with any insect.

35. I trim my trees once every other year, about the time of blossoming; keep the young shoots, or suckers trimmed off every year.

36. I have not tried any experiments this year.

FENCES, BUILDINGS, &C.

37. One barn 52 feet by 44; lintel on two sides, used for stowing hay and stabling cattle and horses. One barn 64 feet by 30, used for the same purpose. My barns are one hundred rods apart. My farm was formerly owned by two individuals.

38. My new fence is constructed of cedar and butternut posts, four holes morticed in each post, bars of hemlock. I have two hundred rods post and board fence, all in good condition; cost forty-five cents per rod when I have the boards and posts to buy I have not made any wire fence.

39. My farming operations are not guided by any accurate weighing or measuring, as I understand the question. I farm it for the good of the soil and large profits.

40 I keep farm accounts; I can state the annual expense in

improving my farm, and the income from it, so as to strike an accurate balance of the debt and credit at the end of the year.

I think the practice of keeping farm accounts would conduce very much to careful farming, and in the end would improve our system and better our fortune.

Albert G. Ford, in account current with his Farm.

Dr.

One man eight months,	$112	00
One woman one year,	50	00
Paid for extra labor in haying,	31	00
Two tons of plaster,	6	50
Bandage cloth for cheese,	8	40
Five barrels salt,	5	63
Five hogs on hand, Dec. 1850,	32	00
Bill for blacksmithing,	10	25
Wintering stock in 1850–51—75 tons hay, $6.00 per ton,	450	00
Three tons of shorts fed in the spring,	46	50
Twenty-five bushels corn fed to horses,	13	50
Eighty-five bushels oats fed to horses,	34	00
600 lbs. pork used in family,	30	00
250 lbs. beef, do	10	00
Eight bbls. flour, do	35	87
Grocery bill,	41	95
Expense of wintering hogs in 1850–51,	8	50
20 bushels corn fed to hogs and pigs this fall,	10	00
Total,	$936	10

Cr.

19,664 lbs. cheese made this season,	net.	$1,199	01
439 lbs. butter sold,	net.	61	54
Deacon skins,		12	00
2,624 lbs. pork at $5½ per 100 lbs.,	net.	144	32
Six calves raised this season,		30	00
Growth of four yearling heifers,		32	00

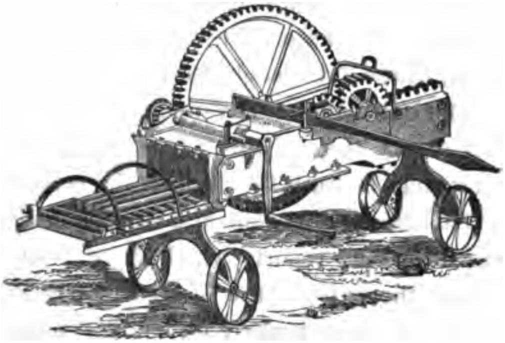
11 galls. maple molases sold last spring at $1.00 pr. gal.	$11 00
145 bushels oats raised this year and on hand,.......	44 95
60 bushels corn raised and on hand,............... .	30 00
195 barrels of winter apples, sold,...............net.	195 00
85 tons hay cut this season, at $6.00 per ton,.........	510 00
Seven new swarms of bees,........................	31 00
Hay sold on the ground,............................	8 11
Five hogs on hand,................................	35 00
One bullock hide, sold,............................	3 25
One quarter of beef, ...	4 93
Two beef cows, sold,............	44 00
	$2,396 17
Expenses,.....................................	936 10
Profits,..	$1,460 07

Statement of Mr. Ford, verified as required by the rules of the Society.

H. TEN EYCK FOSTER, Lakeland,
WILLIAM KELLY, Rhinebeck,
Committee.

DRAINING.

B. P. Johnson, J. M. Sherwood, J. Stanton Gould, Committee.



Tile Machine.

The Committee to whom was referred the articles on draining, most respectfully report, that there were submitted to them for examination, statements from Mr. John Johnston, of Seneca co., Hon. T. G. Yeomans, of Wayne, and Mr. D. Hess, of Madison county. The first two reports named, give the details of their operations, the expenses attending upon the drainage, and contain information of value to our farmers, and which will doubtless lead to further improvements. It would have added to the usefulness of these reports, if more particular statements had been given in regard to the value of the land, and the increased quantity and quality of the crops on the drained land as compared with the yield of the lands when undrained. The statements should contain when practicable, the amount of three or four crops before draining, when in cultivation, and an equal number after, as this would clearly show the advantages resulting from the drainage. Mr. Johnston has done this to some extent, but Mr. Yeomans having but just completed his, has not been enabled to do it. Such a statement in detail would form an acceptable present to our agriculturists.

The statement of Mr. Hess is deficient in the details required to render his report of value. The Committee recommend to the Executive committee to award to John Johnston, Seneca, the first premium, Silver cup, of the value of $30, and to Hon. Theron G. Yeomans, of Wayne, second premium, Silver cup, value of $20.

The importance of this subject to our farmers, will warrant the Committee in some remarks on the subject generally. That all wet soils should, where practicable, be thoroughly drained, so as to prepare them for cultivation to advantage, can not be questioned. From whatever source the moisture arises, whether from surface water, or from springs beneath the surface, the necessity exists for its removal. That this can be done at a reasonable expense, ordinarily, is shown by the reports which have been made; and although to some, the expenditure of from thirty to forty cents per rod may appear large, yet where on land, as in the case of Mr. Johnston, where previous to drainage, he had not been able to raise a remunerating crop, the first year succeeding, he raised 83 bushels of corn per acre, and the land has since continued equally remunerative, it must be obvious that this was an expenditure which sound economy justified.

Care is necessary in averaging the depth of drains and their distance so as to secure thorough freeing of the land from moisture; but a little experience very soon enables the farmer to determine this. As in all the operations of the farm, there should be judgment used, and such a depth of the main drains as well as distances of the connecting ones, as will accomplish the object with the most economical expenditure should be secured.

An interesting account of drainage upon the farm of Sir John P. Boileau, Bart., a corresponding member of our Society, in England, having been presented us, as it is appropriate to the subject before us, we give it entire.

DRAINAGE OF HETHEL WOOD FARM.

To Mr. PUSEY: Dear Sir—In compliance with your request, I have much pleasure in forwarding to you the statement of the facts connected with the drainage of Hethel Wood estate; the details I will at once proceed to give as briefly as possible. This tract of land is a late purchase of Sir John Peter Boileau, Bart., of Ketteringham Hall, whose zeal for the most liberal promotion of agricultural and other improvements is well known in the county of Norfolk. It contains about 154 acres, and is situated in a nearly level and table-land district of about 4 square miles in extent. Indeed, such is its flat appearance, that persons in the locality believed it incapable of drainage.

The nature of the surface and sub-soil is of a most uniform character, and consists of detrital deposits. With the pulverization of the soil, which has been going on for ages without proper drainage, it has become a compact and inert clay, which extends to a depth of from about 1 foot to 18 inches; underneath this the soil is composed of a similar description of clay, but has numerous nodules of chalk, and is consequently of a more marly character than the surface soil. In this sub-soil there are also present pockets of sand; from thence downwards it increases in its chalky properties until it reaches the upper chalk. As regards the inclination of its general surface, it was found, when the levels were carefully taken, that the average fall was about 1 foot in 800. Seeing, therefore, that the fall was so slight, it was thought to be necessary that the inclination of the main drains should be particularly, attended to, and the fall economised as much as possible; keeping in view at the same time, the desirability of making the draft of the minor drains as short as practicable for the same reason, namely, the slight fall. It may be well here also to state that it has been the custom to drain lands of a similar description in this vicinity, by digging trenches two to three feet deep, and filling them in with dead brushwood at the bottom; but this system has been found to be efficient for four or five years only. It appears to me that the inefficiency after the expiration of this period is to be accounted for by the gradual consolidation of the particles of clay around these brushwood stems, which stop the passages by which the water found its exit; for these passages must at first be so numerous, and the streams of percolation so divided, that they do not possess sufficient strength to maintain their courses. I know it is the opinion of many that these brushwood stems in course of time will decay, and thereby provide larger passages for the water; but when the stems once become coated with this clayey substance and the air excluded thereby, the decomposition of the wood ceases, as is proved by taking out some of the wood which has been buried for years, and appears to be nearly as sound as the day it was put in. The cost of this, with trenches 10 yards apart and 2 feet 6 inches deep, is said to be about 35s. ($8.40) per acre.

In the system of drainage adapted at Hethel Wood Farm it has been attempted in every instance to prevent the water from the higher and more inclined surfaces from running upon or into the lower land. Upon the more inclined surfaces the drains have been laid upon an average of four feet deep and 30 feet apart. Upon the lowest lands they have been laid 24 feet apart and four feet deep.

The lowest lands during the whole of last winter were very wet, and the surface so charged with water, that in walking across them the foot would sink in ankle deep. These wet lands were the first drained, which was at the beginning of February last. The quantity of rain which fell during the early part of the spring clearly showed, by the body of water discharged by the drains, and the improved appearance of the land, that ample drainage has been effected; and there can be little doubt, after the expiration of the present summer, and the cracking of the soil between the drains has been effected and new channels thereby formed, that increased efficiency of the drainage will ensue during the coming winter. The pipes which have been used for the minor drains are 1½ inch in diameter. The pipes for the main drains varied in size from three to five inches, according to the quantity of water which they might have to discharge. The sub-soil dug out, consisting of clay mixed with chalk nodules and occasional sand-pockets, which vary from three to four inches in diameter, was thought to be valuable for spreading on the surface. This opinion was confirmed by that intelligent and practical agriculturist, Mr. John Hudson, of Castleacre, Norfolk. The quantity amounted to about 90 loads per acre. This dressing must produce an effect upon the land, and make it, in conjunction with drainage, more pervious to moisture, and afford greater facility for the roots of plants to expand, and also tend to decompose the free acids, and also those in combination, existing in the soil in a natural state, and inimical to vegetation. I was very desirous that the existing open drains should be filled in with proper sized pipes, by which the chance of neglect of keeping them clear would be obviated, and a considerable surface of land would thereby have been acquired; but the high prices demanded for such pipes, in the locality, precluded their use. As regards the system adopted in executing the work, it may be stated that the first foot was plowed out, the rest taken out with narrow draining spades and the lance-headed tool.

The estimate of the cost of the work was £539 9s., exclusive of spreading, which amounted to £37 5s., making a total of £576 14.; whereas the actual cost was £568 14s. 2d., or £3 14s. 4d. per acre; ($17.93.) The cost would not have amounted to this, had the manufacturer supplied the quantity of pipes he had engaged to do at 16s. per thousand. In consequence of his failing to do this, some of the pipes had to be procured at a cost of 25s. per thousand.

It is seldom a case occurs where drainage is likely to be more beneficial; and there is little doubt the spreading of the subsoil, in conjunction with perfect drainage, will enhance the productiveness of the land at least 30 per cent, which advantage, if realized, I think it will be admitted has been obtained at a very moderate cost; for it is stated by Mr. Raynbird, in volume vii. of the Society's "Transactions," that the labor of subsoiling, filling, and spreading alone is considered worth 2½d. per load, which at 90 loads per acre, would be worth nearly 19s. per acre.

I am, dear Sir, yours faithfully,

HAMILTON FULTON, *Civil Engineer.*

8, *Great Queen st.*, *Westminster*, *June*, 1851.

EXPERIMENTS IN DRAINING,

By John Johnston, of Seneca County, N. Y.

To the Executive Committee of the
New-York State Agricultural Society.

GENTLEMEN—In your list of premiums presented to the farmers of this State for competition, at the winter meeting in January next, a premium is offered for experiments in draining.

Having long esteemed a good system of drainage as important to good farming, and being well convinced that it would much increase the profits on most farms, I have made tile drains on my farm in Seneca county, extending to full *sixteen miles* in length. The farm is situated on the rich clay ridge which extends from the Seneca river southerly to Tompkins county, a ridge of land devoted chiefly to the cultivation of wheat. I was many years ago satisfied of the necessity of removing in some economical way the surplus water which saturated the soil, and too often interfered with the growth or maturity of the crop, not only the wheat, but also with other grain and clover. My first efforts, for more perfect drainage, were made in 1835, when I imported a pattern of Drain Tile from Scotland, and caused them to be made in this neighborhood by hand labor. But it was not until 1839–40, that I felt encouraged by success, as the labor and cost were too great to warrant extensive use; such tiles as were used by me, gave satisfactory evidence of their value. The important changes effected on portions of my farm, were noticed by your present presiding officer, and so thoroughly convinced him of their utility and necessity of drainage, that 1848, he imported a machine for making drain tiles in this county. From that day the expense or cost has been reduced, that no excuse exists for wet fields or grain being destroyed by freezing out. From that day I have continued to construct drains as fast as my proper farm labor would permit, and present to you the results thus far obtained. The question as to the depth of drains has always been one of interest, and some uncertainty. On this point, I deem it absurd to propose any fixed rules, as the depth must depend upon the formation of the land and nature of the soil. The rule adopted by me, is first to select a good outlet for the water, then to dig a ditch so deep as to find a hard bottom, on which to lay the tile; yet I have laid many tiles on clay, and they have done well. On my farm this depth is generally found at two and a half to three feet in depth, and I believe no drains ought to be less than two and a half feet in depth, the distance between the drains are regulated by the character of the soil; if it is open or porous, drains three or four rods apart may thoroughly drain it, while on more tenacious soils, two rods apart may be needed. In most cases, where my fields lay nearly level, it has been found necessary to construct the drains nearer to each other, adopting as a rule, that the drains should always reach the point of the field, where water is indicated to rise, and that is always at or near the highest part of the field, although that may only be observed when there is much water in the earth, and the springs full, or when the field is in wheat or clover; at such elevations, I put my drains deeper and nearer each other to make sure to keep the water all under ground, using smaller tile leading to the main or submain drains.

This rule has been important, for when opening ditches on the low grounds the water has flowed with a force to induce most people to believe that it was derived from springs close by, when possibly the spring may be some 60 or 80 rods distant at or near the most elevated part of the field, which, when reached, may save much expense in draining the lower lands. This shows the necessity of thoroughly examining the land to be drained in the wettest season. The main drains occupy the valleys or lowest grounds, receiving the lateral drains and collected water. They are constructed of larger tiles, *and discretion and care are very necessary to apportion the main drains to the quantity of water to be discharged.* In several instances I have found it necessary to lay a double row of four inch tile in main drains to carry off the quantity of water collected by the smaller tile. I have generally used the half round or horse shoe tile, as they are called. The four inch tile are in most cases large enough for main drains and they will discharge a body of water far greater than most persons would believe, unless they witnessed their action. There may be places where larger tile are needed. In one instance I found it necessary to use six inch tiles for sixty rods and laid them in double rows. This would only be necessary where the thaws of early spring or heavy summer rains are apt to collect large quantities of water on the surface. To prevent a wash of the surface in such places I have at regular distances filled the ditch directly over the tiles with small stones for a length of from 12 to 18 inches, the stones to rise a little above the surface to prevent the covering of the stones by the plow, through these stones the surface water will pass rapidly down into the tiles and be carried off at once. When the tiles are laid in the ditches with regularity and care, the earth is thrown in by a plow having a doubletree 9½ feet long to enable a horse to go on each side of the ditch, which is a rapid and economical way of filling them. In regard to cost, I find that drains constructed with two inch tiles can be finished complete for 30 cents per rod, yet something must depend on the digging, whether the earth be hard or soft and the distance to draw the tiles; mine have all been drawn five miles, and I find that two inch tile are large enough, except for main and sub-main drains. In my own case, I was compelled to feel my own way and discover the best system and best adaptation to my lands, consequently the drains have cost me more than they would if I were to construct them with my present experience.

In order to show the benefits derived by me, the following remarks will be necessary—to me the results are very satisfactory and conclusive; my farm is on the east side of the Seneca Lake, opposite to Geneva, and immediately adjoining the farm of your honorable President, John Delafield, Esq. About six years ago I began to drain a field on the boundary line between Mr. Delafield and myself; the field contains about 20 acres, of which six were then subject to drainage; the six acres had seldom given a remunerating crop, even of grass; after draining the six acres, the whole field was plowed and prepared for corn, two acres being reserved for potatoes. The usual care was given to the cultivation of the whole crop, which, during its growth, showed a marked difference between the drained and undrained portions of the field: the yield of this field proved to be the largest ever raised, as I believe, in the county, the product being eighty-three bushels and over, per acre; when the corn was husked and housed, it was weighed and measured in the ear, and allowing *seventy-five pounds* to the bushel, as has been customary in this region, for corn and cob, the product was as above stated. This field attracted much attention, from my neighbors and other gentlemen from more distant places; it was examined at the time of draining, and after plowing, both the first and second season, permitting the parties to walk on the drained parts, without any undue moisture, while all other undrained land in the neighborhood was muddy, and, as before stated, the corn was found to be far more vigorous in the plant and abundant in the grain. In the following season after the corn, I cropped it with barley, and found the drained land produced altogether the finest plant, and the best yield of grain; when the barley was harvested, I prepared the field and cropped it with wheat. The difference again was so striking and distinct in favor of the drained land, that I felt the propriety of thoroughly draining the whole field, which was completed without loss of time, at a cost of twenty-two dollars per acre for the whole field. I then plowed and sowed with barley and seeded with clover; of the latter I cut a very large crop last summer, and not one square foot of the clover froze out, and now I can rely on a good crop of anything I may sow or plant. I had previously drained several other fields, or at least those parts that needed drains. Encouraged by a considerable increase of products derived from my farm from draining, I determined to extend the system as rapidly as convenience and circumstances would permit. Upon examination, it appeared necessary to possess a piece of ground belonging to a neighbor, that I might secure a good and sure outlet for the water from some of my upland fields that required draining in places. With this view I purchased 10 $\frac{60}{100}$ acres of low land, saturated with water. A part of this land, say about four acres, from twelve to eighteen inches of the surface was a black vegetable mould lying on a stratum of clay of the same depth, under which I found a hard bottom for my tiles, not over three feet in depth, I felt persuaded that those ten acres were wet from my own upland, as well as from my neighbors wet land adjoining. The first ditch I dug was directly on the line betwixt the land I got of my neighbor, and that he still owns. This I found cut off all the water on that side. I then commenced draining that 10.60 acres; also about thirty acres of upland; a *large proportion of the upland* did not require draining. In the two pieces, which, made into one field, containing about forty acres, I laid 1,072½ rods of drain which have drained the whole extent in a thorough manner. The flow of water is so large at times, I was compelled to use a large number of the largest sized tiles, and for main drains, as I had to have three, I had to lay double rows of four inch tiles, and in one locality I had to use a double row of six inch tiles for over fifty rods; this received a great flow of water from a public road which was let into the tiles by digging a basin at the upper end of the drain, and then filling with small stones over the tiles. These extra sized tiles increased the expense of these drains, making 1,072½ rods, to cost about 40 cents per rod. The first year after completing the drains on this field, the whole or nearly the whole, upland and all, was planted with corn; the season was not favorable for that crop in this neighborhood, yet the crop was fair, say full 40 bushels shelled corn to the acre; the low ground was excellent, where nothing but coarse grass grew for twenty years before. This year, 1851, I harvested, from this field a crop of wheat, and a heavier crop I never saw stand up. Heretofore many acres of wheat were lost on the upland by freezing out, and none would grow on the low lands. Now there is no loss from that cause; only two small patches; in all less than one quarter of an acre was lodged; in fact, the whole field was so even that it was difficult to pronounce any five acres worse than the rest. The wheat fly injured it a little, but I think not a great deal; I have not yet thrashed enough to know the yield of wheat per acre. The wet ground got from my neighbor, was the source of much curiosity to all around, as none would believe wheat could be ripened on land so long saturated with water. It was watched, therefore, from the time it came above ground, in the fall, until the last of it was harvested. The result was a crop of wheat, from that ground, abundant in quantity and excellent in quality.

Such, gentlemen, is the result of my labor in draining. I have forty acres of wheat, now growing on thorough drained land. The improvements in my fields and crops have been great and satisfactory, giving me fine crops of wheat, where formerly it froze out. So well satisfied am I of the advantages derived from the system that I have drained six acres this fall; and shall continue to drain while I have a wet spot on my farm. Your premium list requires that I should give the increased value of the drained land. I feel it difficult to state it in figures. Our farms here are assessed at from $60 to $70 per acre on the tax books. One view of the value, therefore, may be taken; land wholly unproductive, and land worth $60 to $70 per acre. Another view may be taken in the difference in the cost of improvement, say about $22 or $24 per acre, and its cash value, at this time, of $65 per acre; but on such land as I have, if I get two crops of wheat from my drained land, I am paid by the excess of crop, so as to cover all cost of draining, and sometimes more than paid by one crop, that is by the excess of crop beyond what it would have been had the land remained undrained.

The extent of this system of improvement is not, with me, sufficient to give comparative data, or to induce advances on established values of farms originating in drainage. I hope others may have exceeded my sixteen miles of drains, made with tile, then by comparison of cost and results we may better ascertain the increased value of our acres.

Respectfully yours,
JOHN JOHNSTON,
Near Geneva.

We were upon Mr. Johnston's farm in July, and ascertained that he had laid down, since this statement was prepared, upwards of 16,000 tile in drains.

EXPERIMENTS IN DRAINING,

By Theron G. Yeomans, Walworth, Wayne county.

In pursuance of the expressed wishes of the New-York State Agricultural Society to collect practical information on the subject of draining, I will proceed to give as explicitly as my numerous engagements will allow, an account of what I have done during the last three years in this *important branch of agricultural improvement.*

First, in reference to soil and situation of the land: The soil is mostly a loam with a slight mixture of sand and gravel, and in some of the lower places a portion of mucky or decomposed vegetable surface soil, which has doubtless been formed by the wash of the land around, and which has settled in these places. The land is elevated much above the average of lands in the immediate vicinity, and lies in a rolling and sloping position, so much so that my draining operations have caused nearly all who beheld them to wonder that I should incur so great an expense in draining land which was already (as they thought) quite dry enough. This loam soil extends to the depth of 15 to 18 inches, below which there is *uniformly* a tenacious or hardpan sub-soil, which is about as impervious to water as an unmixed clay and which when dry is *very hard*, so that in digging the drains a well sharpened pick-axe is always necessary as soon as the surface soil is removed, which is done with a common spade. The sub-soil, after being made loose with a pick-axe, is thrown out with a round pointed long handle shovel; and the ditch is only made wide enough for the operator to work the shovel in it, and he, standing one foot before the other in the ditch, plies the shovel, bearing the forward hand upon the forward knee as a fulcrum, operates with comparative ease and advantage. The first drains which I constructed, in the spring of 1849, consisted of about *two hundred and fifty rods*, which were dug 2½ feet deep and one foot wide at bottom and filled with stones within a foot of surface, first laying the bottom stones so as to form a throat or channel for the passage of the water; these were then covered with straw and the ditch filled with earth.

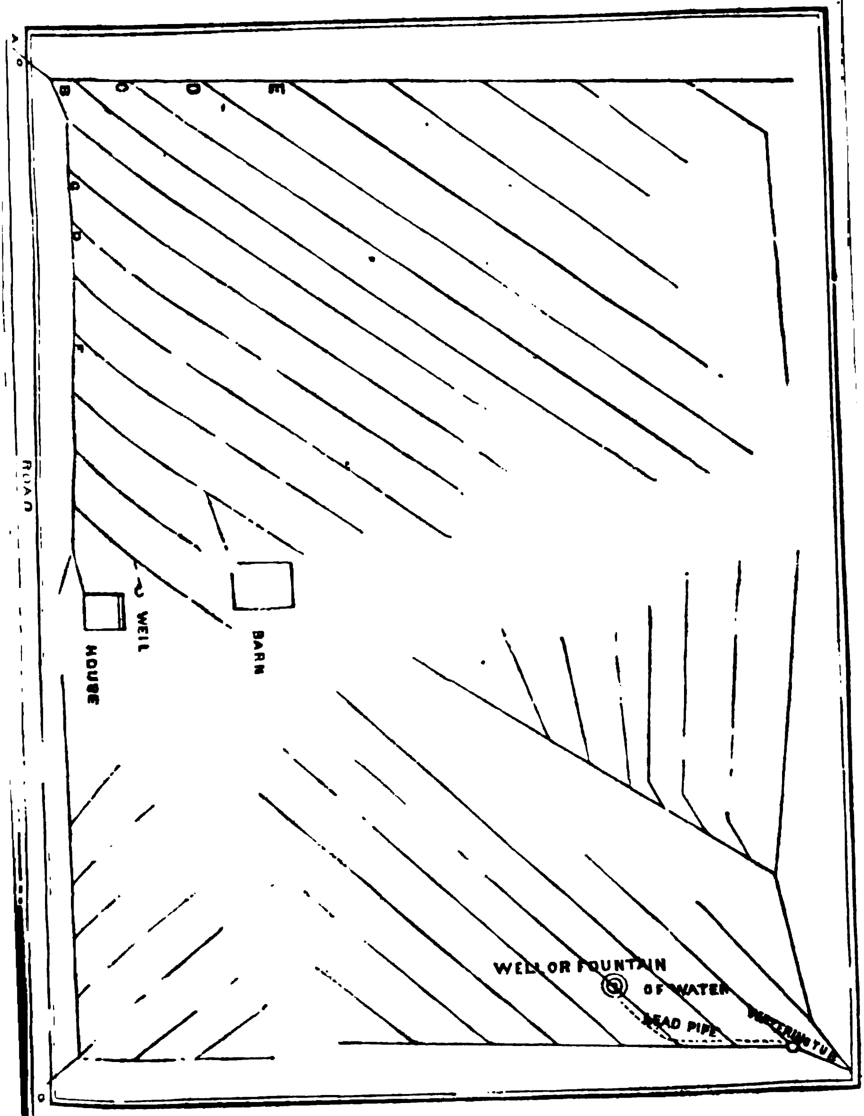


DIAGRAM OF A TWENTY ACRE FIELD,
Drained by T. G. Yeomans.

This kind of drain drains the land well and quickly, except that I find it somewhat liable to clog or stop up, either from the wash of earth by the water or from the digging of rats, meadow moles or mice; this I regard as a very serious objection to stone drains, as it is a difficult thing to find the precise locality of such obstructions or remove them, as a little experience will convince any one. In the fall of 1849 I procured of 2 inch horse-shoe tile sufficient to lay about 220 rods, which were laid on a side hill, the principal drains passing down the hill in an oblique or angling direction, entering a cross drain so that they all terminated at one outlet, these have operated well and drained the land effectually, (having been laid at about 50 feet apart,) except that in two or three places they became obstructed by sand and gravel that had washed down by the current of water and filled the tile, these obstructions, however, were much more readily discovered and more easily removed than those in the stone drains. In the spring of 1850 I purchased the pipes or round tiles, and during the season constructed 1,350 rods of drain and in 1851 I laid 1,240 rods, and for the purpose of giving a more definite idea of the form of their construction I herewith annex a diagram, as near as may be, (without claiming to be precise,) of the drains laid in two fields, one of which was laid in 1850, and the other in 1851. The drains are made 2½ feet deep, and wherever we find a slight elevation extending a short distance only, it is made deeper in order to have the inclination of the bottom as even as possible so that they average something *more* than 2½ feet deep. Having the drains thus opened and the tiles being distributed along the bank, they are laid in by a man who commencing at the upper end of the ditch walks backward down the same, placing the tiles in their places as he goes, which may be done very rapidly, a good hand laying at the rate of 500 to 600 rods per day; being sure they lie in a firm, unmovable position, then place a small quantity of straw or grass over the tile along the drains previous to filling with earth in order to prevent any fine dirt from falling through the crevices into the tiles. In filling the ditches put in first the earth which was taken from the surface as this is more open and loose and the water will always more readily find its way through it to the tile below, and to do this the more readily, in throwing out the earth put the surface soil on one side and the sub-soil or hardpan on the other. In bringing one drain into another I never unite them at right angles but always aim to have the upper side angle much the smallest, so that the water coming from one into the other shall obstruct the current of water in either or both as little as possible, and for this purpose I frequently form an angle in the side drain a short distance above its union with the other, so as to unite them at any angle desired, and at this junction or connecting point I break one or two tiles, if necessary, in such manner as to permit the two upper branches to unite as well with the lower one as possible, and in the form of the forked branches of a tree, and to secure this connection more perfectly, some tile, pieces of tile, or stones are carefully laid in about this point and for several feet below, so that if all the water from the side drain does not readily enter the other at the precise point contemplated, it will find access from among the stones, &c., just below.

Having thus united several small drains, it becomes necessary to lay a larger tile in the drain below, to carry away all the water furnished by the several small drains above, now united in one; this is first enlarged by using a 3 inch tile in place of the 2 inch used above, then still further down, and after other drains shall have been united by a 4 inch pipe, and then perhaps a 4 inch and 2 inch side by side, and so on according to the number, extent and capacity of the smaller drains that empty into it, and in one instance, I thus enlarged one principal drain, till it consisted of 3 four inch tile placed in one ditch, and many times during the year past, I have seen them all discharging water to the extent of their capacity, thus affording to those who have witnessed it, and who doubted their successful operation, a satisfactory demonstration of their practical utility, which no amount of *merely* theoretical illustration and argument could have equalled, and I doubt not that the outlet of about five hundred rods of my drain, terminating as it does by the road side, and coming from land apparently as dry as any other, will do more to convince *those who shall notice it*, of their great value, than the reading of all the books that have ever been written on that subject, numerous and valuable as they may be. I greatly prefer the round pipes to stones or the horse shoe tile, they are less liable to settle into the ground in soft places than the horse shoe tile, as there is no channel of water under them to wear away the earth, so as to allow them to move from their original position, and there is no possibility of their becoming filled up with earth by mice or meadow moles; they are also much less likely to be broken by handling, or in transporting them from place to place. My small or upper drains are of 2 inch pipes, and are enlarged below as before mentioned. I have purchased the greater share of my tile at Waterloo, (30 miles distant,) but the very large ones, or all sizes larger than two inch, I get to the best advantage at Albany. As many drains should terminate and pass out at one outlet as possible, so as to require but little care to see that they are always unobstructed, and this outlet should be of wood or stone, (I prefer wood,) so that the tile will not be exposed to frost when wet, which they will not withstand; one of these drains takes away the water from my barn cellar, and another from the cellar under my house, and a third one the waste water from about the well; and to furnish water for my stock in the fields, I have dug a well 6 to 8 feet deep, and found a durable supply of water, which I carry out far enough down the hill or slope, to bring it above the surface of the ground and into a cask, by means of a lead pipe, which is laid in the same ditch with the tile; after getting a short distance from the well or fountain, the surplus waters from this cask or tub, (for there is constantly a half inch stream running in and out of it,) runs again down the outside of the tub into a tile drain below, which passes under the cask, leaving all about the cask entirely dry; the fountain is stoned up like a well, within two feet of the surface of the ground, and covered over, first with a large flat stone, and then with earth, so that it is entirely obscured and out of the way. I have three such watering places on my farm, and the cost additional to my drains, does not exceed ten dollars each on the average. Their *real value*, I will not attempt to estimate.

The two inch tile cost at Waterloo, $10 per 1000, freight by railroad and waggons, $4.50 per 1000; a thousand lays about 75 rods, so that the cost of tile per rod is about 19 cents, add one cent per rod for laying in the tile and the straw, makes the tile when laid, cost 20 cents per rod. I pay my workmen 20 cents per rod for digging and filling, so that the cost of the drain with the two inch tile is about 40 cents per rod, and with a 4 inch tile about 56 cents. The laborer who does this work, (for one man does about all of it,) clears through the whole season about $1.37 cents per day; and as an evidence that the sub-soil is hard, I will mention that the sharpening of the picks for the 1,200 rods, cost over $5; and this fact, taken in connection with the wages he earned, will show, that he is such a laborer as is seldom found, and I may say that his equal I have never found; his name is Timothy McGarvy, and should not be omitted in this article.

Some of the advantages derived from draining, are that the ground becomes about as dry in two or three days after the frost comes out in the spring, or after a heavy rain, as it would do in as many weeks before draining; enabling the farmer to work his land at almost any time he may desire to do so; it also dries it uniformly alike, all over the field, so that in plowing, he does not find spots of wet and dry, but is all in good condition at once; it causes the lowest places, which were generally too wet at seed time, and consequently produced but little if any crop, to produce the best of any part of the field, being generally the richest soil, from having had the wash of the surface of the land about it for many years.

Some of the land I first drained had been planted with young orchard trees, and in the wettest places some trees died the first winter, and a greater number the second; and some young nursery trees on the same ground were nearly thrown out of the ground by the frost.

After draining it, I replaced the orchard trees, and all have grown well, and the first crop of nursery trees which I was compelled to remove to save them, before draining, have been replaced by others since draining, and they have succeeded perfectly; so that I may now well say, that if we desire to deprive Jack Frost of his power to do us harm, we should keep everything as dry as possible which is within his reach and liable to injury. And I am from my own experience fully convinced that for whatever crop, and especially any crop liable to be injured by frost in winter, such as wheat, clover, &c., whether the season be wet or dry; if the soil retains its moisture too long at any season of the year, (and most soils do,) it will be materially benefited by draining, and in fact I am well convinced that most of the winter-killed young fruit trees, especially the Peach, in many places, as well as the winter killing of many valuable shrubs, vines and ever-greens, which survive the winter in some places in this latitude, and are destroyed in others, is more to be attributed to excessive moisture in the soil during cold weather than to all other causes combined. I will only estimate the increased value of the land, by saying that I have the past year, made over 1,200 rods on 20 acres, at a cost of about $25 per acre; and that I should not permit such land to remain without such draining, even were the expense doubled. Most of the lands so drained have been purchased by me immediately preceding the construction of the drains, and their very recent construction precludes the possibility of giving the specific and comparative productive capacity before and after draining; though on much of it very light crops have been grown for many years past, and no good crop of wheat has been raised on it for a long time; but the reason has not heretofore, to my knowledge, been ascribed to an excess of water, which I believe to have been the principal cause of the non-productiveness of the land. From the experience of two seasons on the small quantity first drained, I am of the opinion that the increased value of the land is much greater than the cost of constructing the drains, but more time is needed to fully test with accuracy the benefits to result therefrom.

In explanation of the diagram of the 20 acre field, O. O. O. are the outlets to the drains, of which there are about 1,200 rods in the field, and the tiles and size of the drains are about as follows: from A. to B., say three 4-inch pipes; from B. to C., two 3-inch pipe: from C. to D., a 3 and 1-inch pipe; from D. to E., one 3-inch pipe, and further up in every direction one 2-inch pipe. The shaded or clouded portions, are ridges of ground, too high to cut through conveniently, and leave the bottom of the ditch a good slope. I omit the other diagram referred to, believing this one will fully explain every principle to which I have referred. The watering tubs alluded to contain about 100 gallons each, and never freeze over, owing to constant overflowing.

Thus I have in three years constructed over nine miles of drain of the three kinds herein named, on land which most farmers thought unnecessary to drain, and which they felt assured *could not be drained with profit.* But notwithstanding, I doubt not the result will be not only a source of profit to myself, but a great inducement to many others to go about the work themselves.

Thus I have rather hastily thrown together the result of my practical experience on this subject, which is respectfully submitted for your consideration.

T. G. YEOMANS.

DAIRY BUILDINGS.

ISRAEL DENIO, JOHN A. SHERMAN, ELA MERRIAM, COMMITTEE.

There were submitted to the Committee two plans for their adjudication—one by Moses Eames of Jefferson county, the other by Paris Barber of Cortland county. Both of these plans exhibit much convenience in their arrangements and in the economy and durability of their construction.

The plan submitted by Mr. Eames, in the curing room, we think, far superior to that of Mr. Barber, as it affords sufficient room on *counters* for keeping and curing his whole dairy through the entire season, is ceiled with *boards* from the floor to the top of the rafters well matched and made tight, which permits of no substance falling upon the surface of the cheese, there being no floor between the roof and the counters, it also permits of a pure and more free circulation of air, which we consider all important in the curing process.

The plan submitted by Mr. Barber, in some respects we consider superior to that of Mr. Eames, more particularly in the arrangement of his outside buildings. The milking sheds and barn for wintering his cows meet the full approbation of your Committee, they being constructed in a most durable, convenient and economical manner. The mode of saving manure practised by Mr. Barber is an important consideration in the construction and arrangement of his buildings. The Committee would therefore recommend a premium of *twenty-five dollars* each to Mr. Eames and Barber for their separate plans. Although we do not deem them perfect in all respects, they show great improvement from the ordinary arrangements of buildings erected for these purposes, and we cheerfully recommend the above premiums.

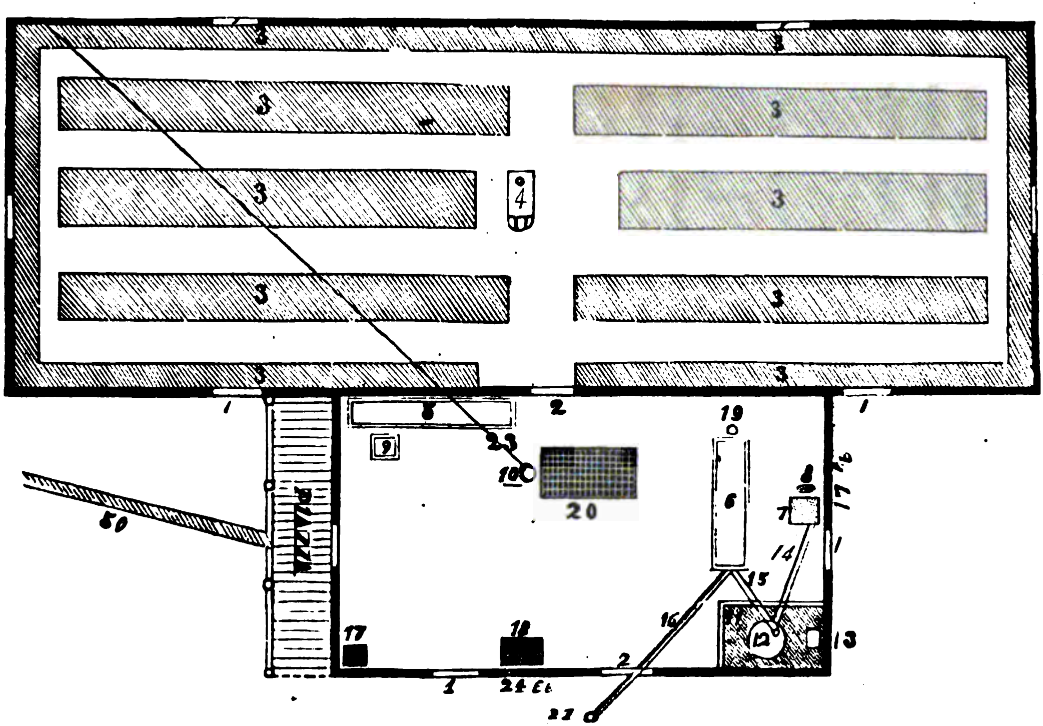
The Committee would notice with much approbation a plan of the Dairy House of Mr. Horace Clapp, of Lewis county, which they examined and which is most perfect in its arrangements, and is well worthy the examination of all interested in the dairy business. As it was not submitted for a premium and was not accompanied with any estimates of expense, the Committee can only express their approbation of the plan.

Cheese House of Moses Eames, Jefferson county.

The Cheese House, of which a plan is here given, is first planked with 1½ inch plank and clapboarded upon the outside, and the inside is ceiled from the floor to the ridge. The advantage of ceiling is that it will be drier in damp weather and cooler in warm weather. The house is up from the ground from one to three feet, which allows a free passage for air under it. There is also a window in each gable end, which will admit of ventilation when required.

The cheese room, is eight feet high, (one story,) and 50 by 22 feet, with an addition of 17 by 24 feet, on one side for a room in which to make cheese and contains the apparatus, &c. The cheese room is well ventilated, and the tables so arranged that a stove can be placed in the center, which is used in the spring and fall, and also in the summer in damp weather; I find it a great convenience to keep off the mold and assist in curdling the cheese, &c.

The table on which the cheese from the press is turned, is upon rollers, and admits of being easily moved to the cheese room, and being of the same height of the cheese tables, the cheese is easily turned on to them; and they save any heavy lifting of cheese; the curd sink is also on rollers, and admits of being moved in any part of the room where the cheese is made, and when the cheese is ready for press, it is moved up to the press, and the curd is then dipped into the hoop. It serves also as a conductor for the whey, from the cheese vat to the whey tunnel, as shown in the plan. But the manner of cooling and heating the milk, is one of the best arrangements: the milk is placed in a tin vat, around which is a wooden one, with a space of one inch, into which cold water is running all night from the fountain, and pressing out at the opposite end and down through the floor into a drain; in the morning this pipe is removed, and the steam pipe is arranged and the steam let into the water, which is between the tin and wooden vat, until the milk is warmed to the required heat, which is shown by a thermometer; the steam is turned through the pipe into the cold water, which is soon heated to a scalding heat by the waste steam; and whenever there is more steam than is wanted, there is a waste pipe which will conduct it into the chimney; the steam is changed from the milk to the water by means of two stop cocks, placed near the head or cover of the kettle. And one very important arrangement with this is, that in heating the whey and curd, it is all done evenly and to any required point; and no dipping of hot



PLAN OF M. BAMES' CHEESE HOUSE.

water or hot whey, as has been done by some, to scald the curd, &c. The copper box in which the water is heated for washing and other uses, is placed under the spout of the pump, and requires no moving of water in pails from the pump. The fountain of cold water was obtained by digging into a hill, eighty rods from the cheese house, and making a ditch eight feet deep for twenty rods, and placing small stones for a drain at the bottom; and at the end of the drain, a well was dug ten feet deep, at which place the aqueduct logs commence and lead to the barn-yard, where a double penstock is placed, and thus admits the passage of the water to the cheese house, and giving a supply of water to the yard and also to the cheese house.

I have an ice house some five rods from the cheese house near the dwelling house, for the use of which it was built. I do not find it necessary to use ice in cooling the milk, but use it in making what butter I want for my family; and I think it indispensable to any good dairy, and a great convenience to any family, and a cheap luxury to all. The floor of the room in which I make the cheese is so constructed that there is a small descent to one point near the center and to which all water, slops, or whey, &c. will run and pass through the floor and into a drain. This keeps all the sills and timbers of the house dry and therefore from decay. And for the convenience of getting out the last of the whey and curd from the tin cheese vat, there is a long lever fastened to a beam over the cheese vat with a rod fastened to one end of it, and the other to one end of the cheese vat. Then the lever is easily made to lift one end of the cheese vat, and giving it sufficient inclination to get out the last of the whey and curd, and also assist in washing it out, &c. There is a plug in the center of the cover to the steam-kettle which is taken out every morning and water put in to replace the amount lost by evaporation, and also to give a place to insert a small pump for the purpose of changing the water or cleaning out the kettle, &c. There is also arranged in the cheese room a small platform on which the cheese as it comes from the press is weighed, and thus the amount of salt required from day to day is known. There is also an under-ground passage from the whey tunnel to the hog house which conveys the whey from the sink to the hog house.

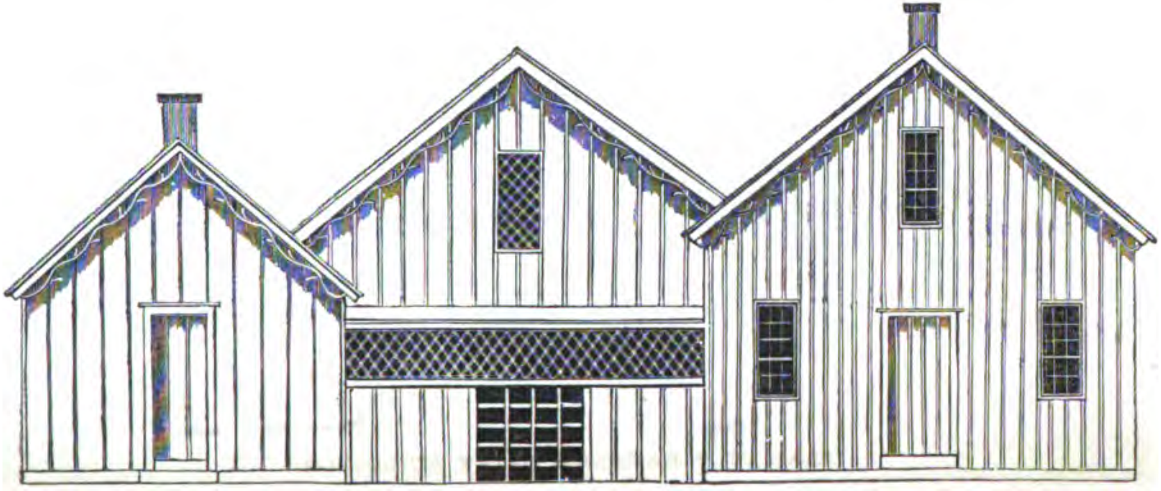
I have made cheese fourteen years, and in that time have tried a number of experiments, having seen to the manufacture mostly and for some years made it myself, keeping from forty to sixty cows at different times.

MOSES EAMES.

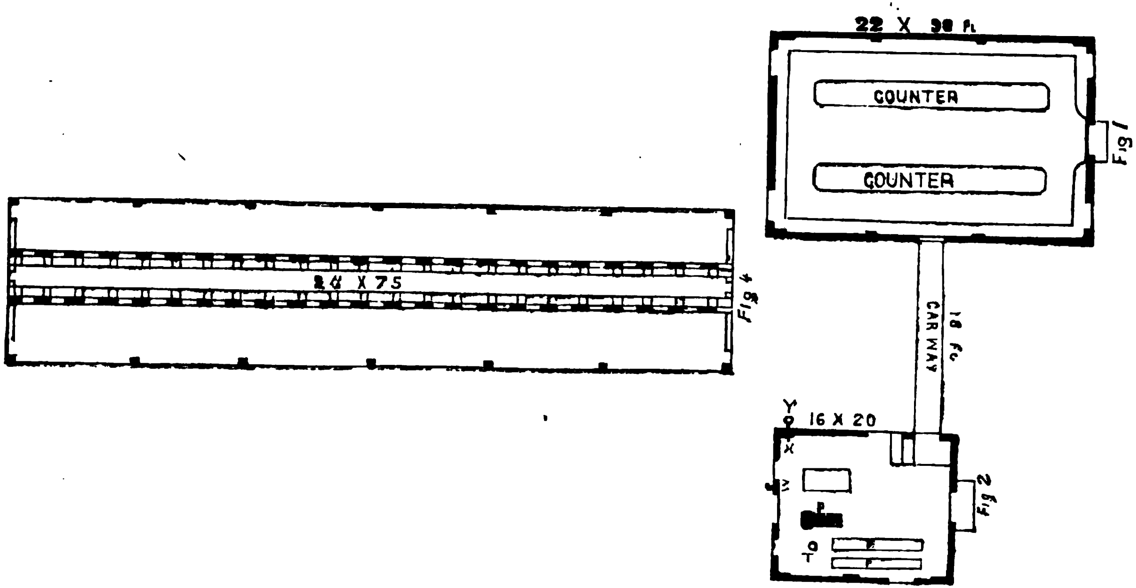
Rutland, Jefferson county.

Bill of Expenses for cheese house and apparatus for making cheese, &c.

Hemlock at $4.50 per M., 5,697 feet,	$25	63
Spruce, at $6.00 per M., 536 feet,	3	21
Pine, at $6.00 per M., 5,234 feet,	31	40
Shingles at $1.75 per M., 13,000,	22	75
Pine for cheese tables, at $20.00 per M., 682 feet,	13	64
Brick at $5.00 per M., 1,500,	7	50
608 feet of hewn timber at 3d per foot,	18	18
1000 feet of 4 by 4 rafters at 4.50 per M.,	4	50
700 feet of sleepers, at $4.50 per M.,	3	15
320 feet of studs 4 by 4, at $4.50 per M.,	1	48
Carpenter job, for work,	75	00
Mason work,	6	00
250 pounds of nails at 7½ cents per pound,	18	75
8 windows or 116 lights and sash,	4	64
Box of glass 7 by 9,	2	25
Brick water cistern,	10	00
Cheese press, $10.00, and 5 hoops $8.00,	18	00
Pump for cistern, $5.00, cheese sink, $4.00,	9	00
Copper box for hot water, under the pump,	5	00
Caldron kettle in the arch for steam,	8	00
Cheese vat of tin, $10.00, and wood, $4.00,	14	00
Stove and pipe,	16	00
Turning table, on rollers,	1	50
Steam pipe from kettle to water and to the cheese vat, and for cold water,	3	00



P. BARBER'S ELEVATION DAIRY BUILDINGS.



PLAN OF P. BARBER'S DAIRY BUILDINGS.

CHEESE ROOM—22x36.
Fig. 1. Showing the counters or shelves of the dairy room.
2. Work room—16x20.
3. Car way from store room to work room.
4. Barn—24x75. Stalls for 50 cows.
5. Elevation of buildings.

F. Furnace.
C. Cisterns.
PP. Presses.
T. Tub of hot water.
W. Spring water.
X. Conductor *a*.
Y. Reservoir.

Steam cover to kettle and two brass cocks to govern the steam,	$2 50
Painting cheese house and apparatus and paint,	23 00
Board of carpenter 12 weeks,	15 00
Team work 25 days at $2.00 per day,	50 00
Ten rods of aqueduct from barn yard to cheese house for the use of cheese house,	10 00
Contingencies, viz., milk pails, dipper, jar for rennet, cheese cloths, &c.,	10 00
	$432 08

Cheese Dairy Buildings, by Paris Barber, Homer.

In submitting my plan, I will simply say, that in getting up my cheese dairy buildings and fixtures, the first point aimed at was economy in construction, with the greatest convenience in all its parts for labor saving, which I consider the all important point in dairying. My cheese or store room, is 22 by 36 feet, it stands one foot from the ground, and is thoroughly banked upon the inside of the wall to prevent frost. It is planked and then boarded up and down, and battened. Inside is finished by a narrow lath over each crack, and lathed and plastered in the usual way; the floor is lined to make it firm and tight, and planed and jointed. The counters or shelves are around the outside and two through the middle of the room, two tier deep; the lower one is six inches from the floor, the space between is two feet three inches; the post or legs are turned to prevent bruising the cheese in turning. The room will hold, with the present shelves, 250 cheese, pressed in an 18 inch hoop, and by the addition of another tier of shelves, the number could be greatly increased. The windows have sliding shutters on the inside, by which I can make it dark, and wire gauze on the outside, to prevent flies; both of which you will readily see is of great importance. There is a large store room above, with a swing stairway, to rise and fall as needed. The room is so tight and well built, that I have not had any trouble in keeping the cheese from freezing during the coldest weather, with an ordinary stove. Cost of building, all complete, $282.92, (builder's bill.) My work room is 16 by 20 feet, it is 18 feet from the store room, and is connected with it by a carway, and saves carrying the cheese by hand. The building is finished in a similar manner to the first described. I have a constant supply of soft spring water, running from a spring on the farm. The apparatus for the manufacture of cheese, consists of a furnace or steamer for heating water and scalding whey; two cisterns, wooden one, and a tin one fit for the manufacture of cheese. Presses; tub for hot water; conductor for conveying the whey to the reservoir. Cost of room $125.50. My milking barn or shed, 24 by 75 feet, with stantials and feeding boxes for 50 cows; the floor is paved with stone, it has swing gates on the sides, and is six feet in the rear of the two buildings referred to, which makes it very easy of access for the milkers; it also makes a division in my cattle yard, and affords a fine large loft for storing hay or corn fodder. Cost $180.50. The cost of the three buildings is $588.92.

The advantages claimed, are: First, economy of construction; second, facilities for doing work; third, preventives against flies, (by dark shutters and wire gauze for windows;) fourth, security against freezing in winter; fifth, internal arrangements, (counters, &c.;) sixth, soft spring water, drainage, &c.; seventh, conveniences for milking, feeding, &c.; eighth, general appearance.

BUTTER AND CHEESE.

HENRY WAGER AND MOSES EAMES, COMMITTEE.

The Committee report, that they have examined all the specimens offered for competition, and have awarded the following premiums:

To Israel Denio, of Rome, Oneida county, the first premium of $15.00 is awarded on three tubs of very superior butter, which reflects great credit on the maker, and in the opinion of the Committee, is conclusive evidence that great improvements are being made in the manufacture of this valuable article of consumption.

To Noah Hitchcock, Jr., of Homer, Cortland county, the second premium of $10.00 is awarded on three tubs of very good butter, which shows great skill and judgment in the maker.

To L. L. French, of Warren, Herkimer county, the Committee recommend a premium of $5.00 on three firkins, taken from an entire dairy, which is very good butter, with the single exception of being too highly salted. Several other samples were offered of good butter, but in the judgment of the Committee not quite up to the standard to entitle them to premiums.

In cheese there was no competition, there being but one sample offered, and that in the opinion of the Committee not of sufficient merit to authorize the award of a premium; and your Committee regret that there should not be more interest taken in this important part of our exhibition.

The Committee have examined the several statements accompanying the different samples of butter, and are of opinion that some valuable suggestions and improvements are given in the statement of Mr. Denio, and the Committee would recommend that it be published.

Statement of I. Denio's Manner of Making Butter.

The milk, as soon as drawn from the cows, is strained through a fine linen cloth into pans containing about six quarts each. The pans are set on a rack made of slats one inch thick and about eight inches apart. The temperature is kept as near as may be at from 50 to 60 degrees, and the milk allowed to stand from 24 to 30 hours before skimming; great care should be taken, however, to take the cream from the milk before it becomes sour and thick. I regard this as a very important feature in making fine butter, as I consider it impossible to obtain a fine article from milk that is sour and loppered through. My milk room is above ground and separate from my dwelling; the churning is done with a dash churn and usually occupies about thirty minutes. The butter is taken from the churn with a ladle, immediately after it is gathered, and washed thoroughly in cold well water until it is entirely free from milk, then salted with Ashton's Liverpool salt, at the rate of twelve to fourteen ounces to sixteen pounds of butter; no other substance is used in preserving the butter. It is then set in the cellar until the next morning, when it is again worked and packed in white-ash tubs for market. As soon as a churning is packed, a linen cloth well saturated in strong pickle is placed on it to exclude the air from it, and when the package is filled the same cloth is placed on the top of the butter and covered with salt from one to two inches in depth; the salt is kept damp by sprinkling cold water on it as often as it becomes dry. The tubs as soon as filled are placed in the coolest part of the cellar and set upon flat stones. I wish, in connection with this statement, to observe that great complaint is made by dealers in New-York, as well as those in the country, that the great mass of butter from Oneida and Oswego counties is poor in quality, badly put up, and the packages very inferior in make and material. I think in regard to the make of butter that the great error lies in two things: First, the cream is generally left upon the milk too long before skimming, sometimes for fear that all the cream will not be obtained, and oftener because the usual time for skimming has not arrived; both of these habits should be abandoned and the cream taken off at the right time, which is just as the milk is about to change. The second error is want of care in freeing the butter from the milk as soon as taken from the churn. If you have gone through the process correctly up to this point you may still get a poor article by leaving the milk in the butter a little too long after taking from the churn, or not getting every particle of it out at once.

Yours, &c.

Rome, *April* 21, 1852. I. DENIO.

Statement of Noah Hitchcock, Jr.

The butter presented for your inspection was made the latter part of October and the fore part of November. My dairy would average about thirty-eight cows through the season. I have made and put down for market, over and above what we have used in the family, which consisted of twelve in number, 6,285 lbs., which is an average of a little over 165 lbs. to a cow. The milk when taken from the cows is placed in pans on racks in a cool well ventilated cellar and permitted to stand usually till it thickens, the cream is then taken from the milk, put into large cream pails made for the purpose, and stands till the following day when it is churned; a dash churn is used, propelled by dog power. The butter is then taken from the churn and the buttermilk as nearly worked out as it well can be with a butter worker, when nearly one ounce of Ashton's imported Liverpool salt is added to one pound of butter, and well worked in. It is then left to stand some twelve hours and worked again, and in about the same length of time it is again worked and packed for market. A cloth is placed over the top of the tub or firkin when filled, which is covered with nearly an inch of salt, kept moistened with strong brine, covered with a flat stone.

NOAH HITCHCOCK, Jr.

WINTER WHEAT.

Samuel L. Thompson, Setauket, Long Island.

Statement in relation to a crop of wheat, raised by Samuel L. Thompson, of Setauket, Suffolk co., Long Island, 54½ bushels per acre.

1. The land on which the wheat was grown, had had two crops of Indian corn taken from it, without any manure being applied, except in the hills of corn, and then a crop of oats without any manure, and those crops had been taken in constant succession, preceding the sowing of the wheat.

2. The land was in a good state of cultivation, and the soil of a loamy rich nature. The farm is located at Setauket, in the town of Brookhaven, north side of Long Island.

3. After oats harvest, there was about twenty loads of barn-yard manure put to the acre, on the oats stubble, and plowed under deep, and the ground well harrowed. Then at sowing time, there was sowed on about four hundred pounds of *Peruvian Guano* to the acre. There was about a bushel and three pecks of golden Australian wheat sown to the acre.

4. The wheat was sown the 20th September, 1850; sowed broad-cast, and plowed in lightly, with the guano, about three inches deep. The wheat was harvested the 15th July, 1851, thrashed with a thrashing machine, and cleaned with a fanning mill. The yield was, one hundred and nine bushels from two acres, and the wheat was measured with a sealed half bushel. The wheat was sold at $4 per bushel, for seed, and taken to various parts of the country, and the amount realised for the product of the two acres, was $436.

5. The expense, or worth of barn-yard manure in the coarse state in which it was, when applied, was 50 cents per load, $10 per acre; of the guano, $10 per acre. Total for the two acres, $40. The expense of plowing, culture, manure, and preparing the ground for the seed, $5 per acre, making $10 for the two acres. The expense of harvesting and thrashing the grain, &c., $6 per acre; making $12 for the two acres. The expense or value of the seed used, was $8.75 per acre; for two acres, $17.50.

Recapitulation.

Total for manure,	$40 00
Culture, manure, plowing, &c.,	10 00
Harvesting, thrashing, &c.,	12 00
Seed wheat,	17 50
	$79 50

Received for the wheat,	$436 00
Worth of the straw,	10 00
	$446 00
Total cost and expense,	79 00
Net profit,	$366 50

SUFFOLK COUNTY, ss.—Edward Oakes, being duly sworn, says, he is a surveyor, that he surveyed with chain and compass, the land upon which Samuel L. Thompson raised a crop of wheat the past season, and the quantity of land is two acres, and no more.

EDWARD OAKES, *Surveyor.*

Sworn to before me, this 17th
day of December, 1851,

JONAS B. BLYDENBURG, *Justice.*

SUFFOLK COUNTY, ss.—Samuel L. Thompson, being duly sworn, says, that he raised a crop of Golden Australian wheat, the past season upon the land surveyed by Mr. Edward Oakes, and the quantity of grain raised thereon, was one hundred and nine bushels, measured in a sealed half bushel; and that he was assisted in harvesting said crop by Henry Krankink, and that the statement annexed, subscribed by this deponent, as to the manner of cultivation, expenses, &c., is in all respects true to the best of his knowledge and belief; and that the sample of grain exhibited, is a fair average of the whole crop.

SAMUEL L. THOMPSON.

Sworn to before me, this 15th
day of December, 1851,

JONAS B. BLYDENBURGH, *Justice.*

SUFFOLK COUNTY, ss.—Henry Krankink, being duly sworn, says, that he assisted Samuel L. Thompson in harvesting, getting out and measuring his crop of wheat, referred to in the above affidavits, and that the quantity of grain, was one hundred and nine bushels, as stated in the affidavit of Samuel L. Thompson.

HENRY KRANKINK.

Sworn to before me, this 15th }
day of December, 1851, }

JONAS B. BLYDENBURGH, *Justice.*

E. M. Bradley, East Bloomfield, Ontario County.

The field upon which this crop of wheat was grown, of five acres $\frac{49}{100}$, was in the spring of 1849, manured with about forty loads of barn yard manure and planted to corn. In the spring of 1850, it was plowed without manuring and sowed to oats, barley and peas. The fall of 1850, it was once plowed, without manuring, eight inches deep, and sowed the 10th of September with two bushels per acre of Soule's wheat, and thoroughly harrowed in. No further culture. The soil is of a sandy loam mixed with gravel, and lays gently undulating.

The 25th of July, it was just going out of the milk, and was cut with a common hand cradle, bound in small sheaves and set up in open stooks to dry. As soon as dry it was hauled into the barn, thrashed, cleaned and marketed the 15th of September, and found to yield 226$\frac{49}{100}$ bushels of fine quality of wheat. The crop was plastered the first of May with 100 lbs. of plaster per acre.

The cost of crop was as follows:

Five days work plowing and harrowing, hand and team,.	$10 00
Eleven bushels seed, 8*s*. per bushel, ...	11 00
Sowing seed, 3*s*.,......................................	38
One quarter ton plaster, $4 per ton; sowing plaster, 8*s*.,.	2 00
Six days cutting and putting up, ...	6 00
Securing, three days, thrashing, cleaning and marketing, twenty-four days,.	27 00
Interest on land at 100 dollars per acre,................	38 50
	$94 88

The value of crop was:

226$\frac{40}{100}$ bushels wheat at 91 cts. per bushel, ...	$206 16
Ten tons straw at 12*s*. per ton, ...	15 00
	$221 16

Balance in favor of crop, $126.28—equal to $23.00 per acre.

ELISHA M. BRADLEY.

Proofs as required by the Society given, as in the preceding case of Mr. Thompson.

James McCready, 2d, Plattsburgh, Clinton County.

The land has been under cultivation about thirty-five years, the soil clay and muck, land level, descending a little to the east; summer fallowed, no manure used on this or the previous crop, which was spring wheat; one and half bushel seed to the acre, sown broad cast the last week in August; red chaff wheat; harvested with sickle, thrashed in the month of December with a machine, cleaned with a fan mill; two acres and 130 rods; yield, 121 bushels, 60 pounds to the bushel; worth one dollar per bushel.

121 bushels at $1.00 per bushel, ...	$121 00
Straw, ...	6 00
	$127 00

Expenses of Cultivation.

Six days plowing three times, $1.50 per day, ...	$9 00	
One and a half day's dragging at $1.50,.........	2 25	
4$\frac{7}{32}$ bushels seed at $1.12½ per bushel, ...	4 75	
Reaping at $2.00 per acre, ...	5 62	
Binding and shocking,........................	2 13	
Thrashing, at 9 cts per bushel,................	10 89	
Carting,.....................................	1 50	
Interest on land at $50 per acre,..............	7 00	
		$43 14
Net profit, ...		$83 86

JAMES McCREADY, 2D.

(Proofs as required by the Society.)

SPRING WHEAT.

Charles W. Eells, Westmoreland, Oneida County.

Statement of the method of cultivation of a crop of spring wheat raised by Charles W. Eells, of Westmoreland, Oneida county.

The previous crop was corn, which was about one half manured in the hill, and the other half was coarse manure plowed in; no manure the present season. The soil is gravelly loam, in good condition. The farm is situated in the town of Westmoreland, on an elevation inclining to the east; the land was plowed eight inches deep about the middle of April. April 24, sowed four bushels Siberian spring wheat, broad-cast, previously prepared by soaking in strong brine, and adding as much lime as would adhere to the wheat while wet, and covered deep as possible with a large steel-tooth cultivator. The crop was harvested in the usual manner, about the middle of August; thrashed with a flail in November and December. The market price of wheat at Clinton, is one dollar a bushel. Yield 66 $\frac{66}{100}$ bushels upon two acres.

Expense of cultivation and interest on land, ...	$28 00
Proceeds of crop, at $1.00 per bush., ...	61 66

(Proofs as required by the Society.)

BARLEY.

Benjamin Enos, De Ruyter, Madison County.

2¼ *acres*—118¼ *bushels*—52$\frac{27}{45}$ *bushels per acre.*

Soil a gravelly loam with a slight admixture of sand. Last year crop barley, 86½ bushels—plowed ten inches deep. Last of April, 1851, harrowed and plowed the lot; and first week in May sowed six bushels of two rowed (Hess) barley and harrowed it in and rolled with a heavy roller. Harvested middle of August, and thrashed as soon as the grain was dry.

Expense and interest on land at $50.00 per acre, ...	$15 87
Proceeds at 65 cts. per bushel, ...	76 86

(Proofs as required by the Society.)

Eli R. Dix, Vernon, Oneida County. Two acres, 94 rods—117 *bushels, three pecks Barley.*

Soil mostly alluvial, gravelly loam, (three-fourths of an acre gravelly and rolling land,) thirty loads of manure of thirty bushels each, used. Plowed once, ten to twelve inches deep. Sowed eight bushels seed; 25th April, seeded to grass and roller passed over the field; harvested in August; thrashed last December. A small stream of water was turned on the upper corner of the alluvial part of the land the winter before sowing and continued on until about the time of plowing, and was decidedly advantageous, the yield being much larger than on the other portions of the field. Previous crops corn, two years on part, and on the alluvial soil, flax, hemp, barley and potatoes for thirty-five years past. The manure used for two seasons was long barn-yard manure.

Expenses of cultivation and interest on land at $50.00 per acre,..	$35 36
Proceeds, 117 bushels three pecks at 70 cts.,.............	82 42

The barley by standard weighs exceeded the measurement considerably. (Proofs as required.)

William Davison, Hartwick, Otsego County. Two acres and two-fifths of barley, 110½ *bushels.*

Soil dark loam; plowed seven inches deep; field in meadow for five years previous to 1850, when it was plowed six inches deep and planted to potatoes; no manure applied to either crop; sown 7th April; harvested 30th July; thrashed 1st November.

Expenses and interest on land,...........................	$30 00
Proceeds at 65 cts. per bushel,...........................	71 82

(Proofs as required.)

INDIAN CORN.

Elisha M. Bradley, East Bloomfield, Ontario County. Two acres of Corn—Ninety-three buhels per acre.

The field upon which this crop was raised, was formerly a part of two fields; last year one half of the field was a corn stubble, and the other half a clover lay of some years standing. The part of the field upon which corn was grown a year ago, was a clover lay in the spring of 1850, when it was manured with forty loads of manure per acre, once plowed, and planted with corn; yield, about 80 bushels shelled corn per acre.

In the spring of 1851, the field was manured with thirty loads of common barn yard manure per acre, once plowed the first week in May, to the depth of nine inches, (the field having been deeply tilled before,) thoroughly harrowed, and marked out in rows three feet apart each way, with a common corn marker. The 19th of May it was planted with eight rowed corn, (the variety known as the "Yellow Vermont," five kernels being planted in each hill, and all allowed to remain; the quantity of seed per acre, ten quarts. The soil is a gravelly loam, and the field lies gently undulating.

As soon as planted, poles were placed four rods apart around the field, and twine placed thereon, about seven feet from the ground (so as to allow a horse to pass under it) to protect the corn from crows. The corn began to make its appearance above ground the 18th of May, when it was ashed with a teaspoon full of common wood ashes to each hill (or two bushels per acre.) The last of May it was cultivated each way with a common corn cultivator, and thoroughly hoed; and plastered with one bushel of plaster per acre, applied directly to the hill. The middle of June it was again cultivated, and hoed as at first, and again ashed as before. The last of June it was plowed each way with a common shovel plow, and hoed the third time; when it was plastered the second time; no further culture. The middle of September it was glazed; when it was cut up by the roots, and set up in small stooks to cure; when thoroughly dry it was husked, the corn cribbed, and the stalks housed. The corn was shelled and measured the last of December, and the first week of the present month, and found to yield 516¼ bushels of good merchantable corn.

The Expenses of crop were as follows:

Labor of plowing, harrowing and marking, ...	$15 75
Six days planting at $1.00 per day, putting up twine $1.00, ashing and plastering, $4.00, ...	11 00
Twenty bush. ashes at 8 cents, 12 bush. plaster, $2.00,	3 60
Six days cultivating and plowing out corn at $1.50 per day, 25 days hoeing at $1.00 per day, ...	34 00
Five days cutting up at $1.00 per day, 27 days husking at $1.00 per day, securing crop $10.00, ...	42 00
Twelve days getting out and storeing crop, at 75 cts., ...	9 00
Interest on land at $100 per acre, ...	38 50
150 loads of manure at 25 cents per load, cartage and spreading $11.00, one third charged to this crop, ...	15 83
	$169 68

The value of the crop was as follows:

516¼ bushels corn, 50 cts. per bushel, and 11 tons stalks, at $3 per ton, ...	$291 13
Deduct expenses, ...	169 68
Leaving a balance in favor of the crop, of	$121 45

about $22 per acre.

(Proofs as required by the Society.)

PEAS.

E. S. Salisbury, Jefferson County.—One acre 17 *rods*; 46 *bushels* 20 *lbs. per acre.*

1st. Previous crop corn; five loads manure applied on one portion of the piece.

2d. Soil, a mixture of clay and sand, mostly clay. The farm on which the crop of peas grew is located in the town of Ellisburgh, Jefferson county, between the two Big Sandy Creeks, about four miles from Lake Ontario.

3d. No manure was applied to the crop this year. Three and one-half bushels crown head peas were sowed on the piece.

4th. The ground was once plowed at a depth of ten inches, on the 16th of April. On the 22d of April, ground well harrowed down, peas sown broadcast, and plowed in with one horse corn plow, at a depth of four inches, and left in the furrow. August 11th and 12th, cut peas with scythe. On the 15th August, drawed peas and put them in barn—three large loads. November 10th, finished thrashing and cleaning; thrashed with common flail, and cleaned twice with fanning mill, and measured in sealed half-bushel, and weighed on patent scales. The yield was forty-five bushels twelve quarts, and weighed 61½ lbs. per bushel, making 46 bushels and 20 lbs. by weight. Peas have not been sold; are worth at my farm $1.25 per bushel.

Expenses and interest on land,	$14 42
Proceeds—Peas, at $1.25 per bushel,	$56 72
Straw,	4 50
	$61 22

BEANS.

E. S. Salisbury, Jefferson County.—One acre; 34 $\frac{3}{32}$ Bushels.

1. Previous crop, potatoes; forty loads barn yard manure having been applied before planting the potatoes.

2. The condition of the land was good and clean, soil, gravelly loam; the farm on which the crop of beans was raised, is located in the town of Ellisburgh, Jefferson co., situated and lying between the two Big Sandy Creeks, about four miles from Lake Ontario.

3. No manure was applied to the crop this year; one bushel of the small Early Vermont bean was planted on the acre.

4. The ground was twice plowed at a depth of eight inches; first on the 25th of April, second on the 2nd of June, then har-

rowed down and marked, rows 22 inches apart; marked with corn marker, by putting two runners between the others; beans planted June 3d, by dropping the seed along in the rows, about six beans to the foot; hoed the beans twice, 1st on the 26th June; 2d time from July 16th to 18th; no cultivator or plow was used among the beans. Sept 6th to 10th, pulled and stacked the beans on the ground where they grew, by putting stakes in the ground, and stones and blocks of wood at the bottom of each stack; eighty stacks were made on the acre, roots of the beans put next the poles; stacks four to five feet high, three feet through at the bottom; Sept. 19th and 20th, drawed, thrashed, cleaned and measured the crop; the yield was 34 bushels and 2 quarts per acre, measured in sealed half bushel, weighing 63 pounds per bushel, making 35 bushels 46 pounds by weight. Beans sold at my place soon after they were thrashed, at $1 per bushel.

5. Expense of cultivation:

Plowing, harrowing and marking,	$1 75
Planting,	75
First hoeing,	1 13
Second hoeing,	3 09
Pulling and stacking,	2 40
Drawing, thrashing, cleaning and measuring,	1 75
One bushel seed beans,	1 00
Board,	2 50
Interest on land,	3 50
	$17 87

6. Value of crop:

34 $\frac{2}{32}$ bushels beans, $1 per bushel,	$34 06
One ton of bean pods and vines,	5 00
	$39 06
Expenses,	17 87
Net proceeds per acre,	$21 19

(Proofs as required by the Society.)

TIMOTHY SEED.

Douw Van Vechten.

Manner of cultivation. This land was seeded down in the spring of 1849, on oats and peas. The quantity of seed sown was about fifteen quarts of clover and timothy, half of each mixed, and in the year of 1850, about the 15th of April, it was sown with about half a bushel of plaster to the acre; the first of July it was mowed for feed, and on the first of October, it was cut the second time for seed clover; and in 1851, it was mowed for timothy seed about the last of August; and that the quantity of seed from the piece, of one acre and twenty-two rods, was nine bushels and eight quarts.

(Proofs as required, by Society.)

C. W. Eells, Westmoreland, Oneida County.—Timothy seed, one acre, six and a half bushels.

The previous crop was hay. The farm is located in the town of Westmoreland, in the south-west corner, near the town of Kirkland, on an elevation inclining to the east. The soil is is a gravelly loam, in good condition; no manure on the land for several years; the crop was allowed to stand until ripe enough to begin to shell; was then cradled up from the ground high as possible and save all the heads; bound up immediately and set up in stooks and let stand about ten days before carting to the barn. The bottom, or stubble, is mowed as soon as the bundles are set up, and carted to the barn without drying at all and salted, one peck salt for every ton of hay. The bundles were thrashed in December, with a flail, cleaned with a good fan mill and then sifted over again with a fine seive.

Expense of cultivation and interest on land, ...	$7 00
Produce—seed, $19.50; hay, $8.00, ...	27 00

CULTIVATION OF TOBACCO,

By Thomas A. Smith, Syracuse.

The sample is from a field of five acres, of very uniform growth. Soil a sandy and gravelly loam, with a free dry subsoil. The field, as I have been informed by a former owner, was well manured for a single season, some eight years ago, with stable manure, and planted to corn. Since then it has been cropped with wheat, oats, &c., having been constantly under the plow, without additional manuring, except the use of plaster. In 1850 it was sown to Spring wheat—the field very foul with *quack*, and crop light.

1851.—Plowed last of April six or seven inches deep, and followed with the subsoil plow, loosening the bottom of the furrow six or seven inches in addition. Harrowed, and left the field at rest till the fore part of June, when about one-hundred one-horse cart-loads, principally of horse manure, (or twenty loads of twenty bushels per load per acre,) were spread, and covered with a two horse wheel cultivator. There were mixed with the manure about ten bushels of plaster, twenty of lime, and fifty or more of ashes. The plaster and ashes were spread over the heap to prevent the escape of the gases, the manure having been gathered and piled up during the spring—while the lime was mixed with the coarser portions to hasten decomposition. By the subsequent shoveling to and from the cart, these substances are supposed to have been generally diffused through the mass, and evenly spread over the field, which gave a dressing of lime, plaster, and ashes, of about twenty bushels to the acre, in addition to the manure, and combined with and preserving some of its best properties.

Large quantities of *quack* roots were loosened by the cultivator, which were raked into winrows by a wire tooth horse rake, and carted off the field. This process was repeated, the second time crossing the field diagonally to the first. The cultivating, &c., effected a tripple purpose—freeing the field in some good measure of what to most farmers is considered a formidable enemy, the *quack*—thoroughly incorporating the manure with the soil at a depth suited to the early and greatest benefit of the crop—and leaving the surface well pulverized, and in a fine condition for planting. This fine pulverization of the soil I consider as effecting no inconsiderable part in the final result. The subsoil plowing, too, appeared to have been highly beneficial.

Planted from 15th to 25th June; hoed twice, thoroughly running the Cultivator between the rows at each hoeing, and going over the field a third time with the hoe, to cut out the weeds and grass that had escaped the regular hoeings. Cut and housed from 10th to 20th September. The exact amount per acre is not ascertained, as the leaf has not been taken from the stalk. It was estimated, however, by those familiar with the culture, that the crop would yield eighteen or twenty hundred pounds per acre. Nor has any detailed account of expenses been kept; but estimating the cost by the same authority, at $45 per acre; and also the value at $8.00 per hundred, which is said to be the average price, though last year the crop sold at $10 and upwards, and the product, at 1,800 pounds, the proceeds would be $144 per acre, or affording a profit of $99 per acre, including use of land.

THOMAS A. SMITH.

Dated Syracuse, January 20, 1852.

FLAX.

Benjamin Akin, Rensselaer County.

Rensselaer County, ss

Daniel F. Aikin being sworn says, he is a surveyor, that he surveyed with chain and compass the land upon which Benjamin Akin raised a crop of flax this past season, and that the land was in one continuous piece, and that the quantity is one and $\frac{84}{100}$ acres and no more.

D. F. AKIN, *Surveyor.*

Sworn to before me this }
15th day of Jan., 1852, }

J. L. VAN WOERT, *Justice.*

County of Rensselaer, ss.

Benjamin Akin being duly sworn says, that he raised a crop of flax the past season, upon the land surveyed by Daniel F. Akin, and that the quantity of flax raised thereon, as rendered by Martin C. Eycleshymer, was seven hundred and ninety-eight pounds, and that the quantity of flax seed raised thereon, was twenty-three bushels, measured in a sealed half bushel; and that he was assisted in harvesting and measuring said crop of flax by Warren Akin, and that the statement annexed, subscribed by this deponent, as to the manner of cultivation, expenses, &c., is in all respects true to the best of his knowledge and belief.

BENJAMIN AKIN.

Sworn to before me this }
15th day of January, 1852, }

J. L. Van Woert, *Justice*,

Statement of above deponent.

The soil is a heavy loam, on upland; the crop next preceding the flax was oats, and the crop preceding that was corn, which previously had lain to pasturage for a number of years, no manure was used on any of the crops.

One and a half day's work with team in plowing,......	$3 00
Half day in dragging and sowing the seed,............	1 00
Six days in pulling flax at $1.00 per day,..............	6 00
Two days in thrashing and cleaning seed, at $1.00,.....	2 00
One day in spreading and taking up, ...	1 00
One day with team in drawing in the flax, and drawing it to the mill,.......................................	2 00
One and a half bushels seed $1.50 per bushel,.........	2 25
Paid for dressing and marking the flax, ...	15 96
Interest on land,......................................	10 50
	$43 71

Cr.

By 23 bushels clean seed which is saved for sowing, and is worth $1.50 per bushel, ...	$35 50
798 pounds dressed flax, sold for 10 cents per pound, ..	79 80
	$115 30
Net profit, ...	$71 59

BENJAMIN AKIN.

Sworn to before me this }
15th day of January, 1852, }

J. L. Van Woert, *Justice.*

Rensselaer County, ss.

Warren Akin being duly sworn says, he assisted Benjamin Akin in harvesting, getting out, and measuring his crop of flax, referred to in the above affidavits, and that the quantity of flax seed was twenty-three bushels as stated in the affidavit of Benjamin Akin.

WARREN AKIN.

Sworn to before me this }
15th day of January, 1852, }

J. L. Van Woert, *Justice.*

Rensselaer County, ss.

Martin C. Eycleshymer, being duly sworn says, that he dressed with the assistance of his hands, the crop of flax referred to in the affidavit of Benjamin Akin, and that the mill weight was seven hundred and ninety-nine pounds, and that the same weighed in Troy, seven hundred and ninety-eight pounds, and that the flax was clean dressed and sold for ten cents per pound.

MARTIN C. EYCLESHYMER.

Sworn to before me this }
16th of January, 1852, }

J. L. Van Woert, *Justice Peace*

GRAIN AND SEEDS.

Benj. N. Huntington, Joseph Cary, Thos. B. Arden, Committee.

The committee on Grain and Seeds having completed their labors, beg leave to report:

But two samples of Spring Wheat were entered for premiums; the weight per bushel was the same, and it was with much difficulty, that your committee could decide on which to award the premiums; after close examination, however, we have concluded to award premiums as follows:

First—To Geo. K. Eells, of Kirkland, Oneida county, on his sample, weight per bushel, 61 lbs. $8. *Second*—To David Conradt, Brunswick, Rensselaer county, on his sample of Tea Wheat, weight per bushel, 61 lbs. $5.

Only one sample of Barley was entered for premium, which was a fair sample of four rowed barley; we award the first premium to William Davison, of Hartwick, Otsego county, on his sample, weight per bushel, 49½ lbs., $5.

Only one sample of Timothy seed was entered for premium, it was a superior article of well cleaned plump seed; we award the first premium to Charles W. Eells, of Westmoreland, Oneida co., on his sample, weight per bushel, 45 lbs. 10 oz. $5.

Only two samples of corn were entered for premium, and both of excellent quality; the difference in the weight, has had some influence in the decision, to which the committee have arrived; we award premiums as follows, viz:

First—B. B. Kirtland, of Greenbush, for his sample, weight per bushel, 58½ lbs, prem. $5. *Second*—Adam Laborence, of Bethlehem, on his sample, weight per bushel, 56½ lbs., $3.

One sample of Rye only entered, it was of the Multicole variety, and of fair quality for the kind; it was entered by David Conradt, of Brunswick; the weight per bushel, 55½ lbs.; we award to Mr. Conradt, the first premium of $5.

Three samples of Oats were entered for premium. Your committee do not feel authorised, under the rules of the Society, to award a premium on more than one sample; the other two were mixed with barley, not having been thoroughly cleaned, which added to the weight of the article, while the seed was no better than the one on which a premium is hereby awarded; we award first premium to J. McD. McIntyre, for his sample, weight 39 lbs.; prem. $5.

Messrs. Rapalje & Co. of Rochester, Monroe county, presented for exhibition several varieties of Peas, Beans and Garden Seeds, which were duly entered by them, at the last annual Fair, but for some reason, were not brought to the notice of the committee; the selections are numerous and appear to be of a good quality. It is recommended that the Executive Committee award to Messrs. Rapalje & Co., a Silver Medal.

Messrs. Emery & Co. of Albany, presented for exhibition from their seed store, a great variety of Beans, Peas and other seeds, apparently of excellent quality, and great taste showed in the selection and arrangement.

The committee are gratified with the exhibition in this department, and have no doubt that the exhibition of grain and seeds at the annual meeting of the Society, will prove of very great importance.

TREASURER'S REPORT.

Dr. *Luther Tucker, Treasurer, in account with the New-York State Agricultural Society.* **Cr.**

1851.		
Jan'y 15.	To balance in Treasury, cash,	$2,413 07
"	Silver plate on hand,	230 00
"	Cash received at annual meeting,	121 00
March 8.	S. L. Thompson, Suffolk,	10 00
April 3.	H. T. E. Foster, Seneca	10 00
" 16.	A. L. Clarkson, St. Lawrence,	50 00
"	For interest on investments,	490 00
August 1.	From Comptroller,	700 00
"	" " for Museum,	100 00
"	" " for gas fixtures in rooms,	80 43
Sept'r 4.	M. R. Patrick, Jefferson,	10 00
"	John R. Lee, Erie,	10 00
" 20.	Received at State Fair,	11,954 25
"	Received from Rochester Committee for Tent,	200 00
October 2.	Lewis G. Morris, Westchester,	10 00
"	John Delafield, Seneca,	10 00
Dec'r 26.	Sherman L. Wattles, membership,	1 00
"	Rochester Committee,	799 10
1852.		
Jan'y 17.	Erastus Corning, Jun., Albany,	10 00
"	Edward Wells, Fulton,	10 00
		$17,218 85

1851.		
By payments on Premium accounts, A.,		$5,155 73
On expenses State Fair, B.,		3,231 49
County surveys, C.,		638 24
Library and Museum, D.,		373 07
Postages and Express, E.,		223 18
Miscellaneous, F.,		398 21
Salaries, &c., G.,		1,900 13
Incidental expenses office, H.,		190 34
Printing and advertising, I.,		434 89
		$12,545 28
Plate,	$130 00	
Cash balance,	4,543 57	
		4,673 57
		$17,218 85

We certify that we have carefully examined and compared the above account, with the vouchers accompanying the same, and that the same is in all respects just and true.

(Copy.)

J. DELAFIELD, *President.*
B. P. JOHNSON, *Cor. Secretary.*

Albany, January 21st, 1852.

(A.)—PREMIUMS.

1851.				
Jan. 16.	Paid	A. R. Dutton, on beans,	1	$10 00
		H. B. Bartlett, on oats,	2	20 00
		do on potatoes,	3	15 00
		Ela Merriam, on butter,	4	15 00
		Nat. Hayward, on carrots,	5	6 00
		P. Crispell, jr., on corn,	6	20 00
		E. R. Dix, on barley,	7.	10 00
		M. G. Warner, on tobacco,	8	5 00
Jan. 24.		D. J. Millard, on implements,	11	8 00
		H. B. Bartlett, on molasses,	12	10 00
		Robt. Eells, on grass seed & corn,	13	20 00
		Geo. K. Eells, on oats, &c.,	14	13 00
		E. Risley & Co., on carrots,	15	8 00
		Wm. Baker, on barley,	16	5 00
		V. H. Halleck, on turnips,	17	10 00
		E. M. Bradley, on barley, &c.,	18	25 00
		Justus White, on wheat,	19	5 00
		Mrs. A. Howland, on needlework,	20	3 00
Jan. 29.		W. Comstock, on swine,	29	13 00
Feb. 1.		D. D. T. More, on farm, (cup,)	31	30 00
3.		E. M. Bradley, on do (do)	32	20 00
5.		Mrs. E. Bowen, on dom. manuf'rs,	33	4 00
5.		Minerva Pine, do do	34	2 00
7.		Rob't Eells, on cheese,	35	10 00
8.		Alex. Thompson, on flowers,	40	3 00
10.		Mrs. Sarah E. Beaverstock, D. M.,	41	3 00
20.		Robert Lovett, medals,	42	23 75
25.		Nahum Taft, on potatoes,	43	15 00
28.		Rawson Harmon, on farm, (cup,).	44	50 00
28.		A. Bryant & Son, on fruit, &c., 1846,	45	3 00
28.		do do 1848,	46	13 00
28.		do do 1849,	47	9 00
Mar. 8.		S. L. Thompson, on wheat,	55	15 00
12.		Ellwanger & Barry, on fruits, 1849,	56	5 00
26.		Gertrude Du Bois, on needlework,	58	3 00

April	7,	Paid	E. A. Van Alstyne, on flowers,..	68	12	00
	12,		J. J. Thomas, on Essay,........	69	100	00
	17,		Mrs. B. R. Voorhies, on D. M.,.	71	13	00
May	7,		Joseph Cary, on butter,........	79	10	00
June	30,		Wm. Hotchkiss, Jr., on wheat,..	86	20	00
			R. H. Van Rensselaer, on rabbits,	87	3	00
July	9,		Mrs. B. R. Voorhies, on D. M.,.	92	2	00
Aug.	21,		Robt. Lovett, for medals,.......	96	310	42
Sept.	4,		H. R. Gardiner, on D. M.,......	102	1	00
	11,		Robt. Lovett, for medals,.......	105	7	50
	20,		Elwanger & Barry, on flowers, &c.	106	20	00
			Hugh Mulholland, on vegetables,	107	3	00
			E. S. Treat, on poultry, ...	108	3	00
			Bissell & Hooker, on fruit, ...	109	5	00
			Jas. Buchan, on vegetables, ...	110	6	00
			Mrs. E. M. Eaton, on needlework,	111	2	00
			Mrs. Eliza Mahew, on D. M.,...	112	4	00
			Geo. Hammell, on cheese,.......	113	15	00
			Rich. Gapper, on cattle, &c.	114	35	00
			E. Sheldon, on cattle, ...	115	15	00
			G. Pennell, on horses, ...	116	15	00
			Chas. W. Ingersoll, on horses, ..	117	15	00
			Albert Howland, on cattle,......	118	5	00
			Jas. Cobb, on grain, ...	119	3	00
			Allen Ayrault, on cattle, ...	120	7	00
			A. M. Starkweather, on horses,..	121	10	00
			Robt. Fowler, on cattle, ...	122	15	00
			W. Summerville, do	123	15	00
			M. Vernon, do	124	30	00
			W. P. Nottingham, on horses,...	125	20	00
			Rowland Sotham, on cattle, ...	126	30	00
			Fred. Paster, on cattle,.........	127	25	00
			J. C. Peck, do	128	5	00
			Hiram Sheldon, do	129	20	00
			Samuel Baker on cattle, ...	130	10	00
			Geo. H. Goodhue, on plowing, ..	131	10	00
			Allen Ayrault, on cattle, ...	132	70	00

Sept. 20, Paid	Samuel Baker on horses,.......	13	$25 00
	Jacob Bowles, do	134	5 00
	T. G. Goodwell, on sheep,......	135	13 00
	John Muir, on cattle,..........	136	10 00
	Rawson Harmon, on cattle,.....	137	20 00
	do on grain,.....	138	10 00
	William H. Cox, on sheep,.....	139	10 00
	P. S. Eastman, on implements,..	140	3 00
	J. S. Eastman, do	141	5 00
	Geo. Warren, on horses, ...	143	8 00
	F. W. Collins, on poultry, ...	142	13 00
	Elias T. Barlow, on sheep, ...	144	8 00
	S. H. Church, do	145	3 00
	L. K. Haddock, on poultry,....	146	3 00
	C. J. Ryan & Co., on flowers, ...	147	20 00
	do on fruit, ...	148	3 00
	S. B. Colt, on poultry,.........	149	6 00
	Wm. Rathbun, on sheep,.......	150	13 00
	Z. B. Wakeman,, do	151	29 00
	Rawson Harmon, do	152	8 00
	C. B. Tuttle, on implements, ...	153	5 00
	Orrin Smith, on sheep, ...	154	5 00
	Chas. B. Meek, do	155	5 00
	L. F. Allen, on sheep &c.,......	156	31 00
	Wm. Rathbun, on sheep,.......	157	49 00
	Jos. Christopher on horses,.....	158	10 00
	Geo. Waffle, do	159	10 00
	Geo. Sheffer, on cattle &c.,.....	160	68 00
	John Muir, do	161	8 00
	Jas. Hayward, on horses, ...	162	8 00
	Reed Burritt, on sheep,........	163	10 00
	H. N. ——, on cattle,.........	164	3 00
	John P. ——, do	165	3 00
	J. M. Gillet, on horses,.........	166	25 00
	L. H. Colby, on cattle,.........	167	35 00
	M. W. Vaninwager, on horses,..	168	25 00
	S. D. Remington, do ..	169	5 00

Sept. 20, Paid	Wm. Pease, on horses,	170	$10	00
	M. L. Hungerford, do	171	5	00
	Samuel Hecox, on sheep,	172	10	00
	Caleb Gasper, on horses,	173	15	00
	R. C. Gapper, on sheep,	174	10	00
	David Hall, do	175	10	00
	E. N. Sheldon, on horses,	176	13	00
	Jared Park, on implements,	177	2	00
	John Donellan, on fruits, &c.,	178	20	00
	Alfred Hall, on horses,	179	15	00
	T. E. Hosebury, on sheep,	180	16	00
	John Musson, on cattle,	181	15	00
	S. H. Church, on sheep,	182	53	00
	E. Sheperdson, on cattle,	183	3	00
	J. W. Hamlin, do	184	8	00
	W. H. Davis, on swine,	185	5	00
	W. R. Utley, on grain,	186	5	00
	David I. Lee, on domes. man.,	187	4	00
	Mrs. E. Bishop, do	188	6	00
	Isaac Hills, on fruit,	189	3	00
	John Cade, on sheep,	190	5	00
	Geo. Commons, on poultry,	191	3	00
	Mrs. T. Hooker, on flowers,	192	3	00
	David I. Lee, on sheep,	193	10	00
	E. H. Hawks, on horses,	194	10	00
	H. E. Smith, on implements,	195	5	00
	Benjamin Gauss, on sugar,	196	10	00
	W. W. Wadsworth, on cattle,	197	20	00
	Marvin Hopkins, on sheep,	198	8	00
	Wm. S. Gypson, do	199	3	00
	Wm. Swailes, do	200	5	00
	Mary Train, on dom. manuf'rs,	201	6	00
	S. P. Chapman, on cattle,	202	55	00
	Adam Fergusson, do	203	30	00
	Wm. Simmons, on needlework,	204	3	00
	Chas. Colt, on sheep,	205	8	00
	Geo. J. Whitney, on flowers, &c.,	206	9	00

Sept. 20.	Paid	W. T. & L. Chappell, on cattle,	207	$18	00
		D. S. Baker, do	208	29	00
		Rufus Pennell, on horses,	209	15	00
		Richard Gypson, on sheep,	210	5	00
		Samuel Baker, do	211	5	00
		Mrs. Hickox, on dom. manuf'res,	212	5	00
		Mrs. E. T. Crocker, on wax flo'rs,	213	3	00
		Ambrose Stevens, on cattle, &c.,	214	59	00
		Chas. Marvell, poultry,	215	3	00
		I. N. Smith, do	216	3	00
		C. W. Eells, on cheese,	217	5	00
		M. Garrett, on swine,	218	3	00
		Caroline Tice, on honey,	219	3	00
		R. Stevens, on vegetables,	220	3	00
		Jos. Pierson, on sheep,	221	15	00
		Jos. Graham, on horses,	222	10	00
		Jas. H. Jackson, on sheep,	223	8	00
		W. A. Cook, do	224	16	00
		N. M. Dart, do	225	18	00
		Orrin Lathrop, on swine,	226	5	00
		C. N. Eells, on grain,	227	8	00
		G. Cook, on domestic manufac.,	228	5	00
		Elihu Beebe, on swine,	229	15	00
		Stepto Woodruff, on butter,	230	25	00
		L. Vandeventer, on swine,	231	10	00
		T. A. Gilbert, on horses,	232	10	00
		R. L. Colt, on cattle,	233	45	00
		Ralph Wade, on sheep,	234	10	00
		W. P. & C. S. Wainright, on cattle,	235	60	00
		D. Hillman & Son, on sheep,	236	13	00
		Theo. Backus, on vegetables,	237	3	00
		Ira Ricks, on cattle,	238	8	00
		J. T. Plato, on plowing,	239	8	00
		N. Hayward & Son, on swine,	240	8	00
		C. W. Eells on plowing,	241	5	00
		Hiram Hosmer, on horses,	242	15	00
		Wm. Miller, on sheep,	243	10	00

Oct. 7.	Paid	H. L. Suydham, on fruit,	244	$2	00
		Sarah E. Granger, on D. M.,	245	3	00
		Mrs. Ellis Goold, on needlework,	246	3	00
		R. H. Van Rensselaer, on cattle,	247	30	00
		Guy Reed, on cheese,	248	20	00
		W. C. Remington, on cattle,	249	10	00
		S. C. Scovill, on sheep,	250	10	00
		D. H. Albertson, on cattle,	251	8	00
		Hiram Wright, on implements,	252	3	00
		L. D. Hickox, on swine,	253	3	00
		Mrs. D. L. Hunn, on needlework,	254	2	00
		Wm. Swailes, on sheep,	255	5	00
		J. M. Sherwood, on cattle & sheep,	256	78	00
		Rich. Winn, on cattle,	257	10	00
		Mrs. Ellen Dow, on needlework,	258	2	00
		E. Sheldon, on cattle,	259	15	00
		John Brown, do	260	32	00
		D. G. Baker, do	261	16	00
		W. H. Sotham, do	262	113	00
		C. Sheldon, do	263	5	00
		E. P. Beck, do	264	25	00
		W. C. Barritt, on D. M.,	265	5	00
		Wm. Newcomb, on flowers,	266	21	00
		E. P. Prentice, on cattle,	267	118	00
		N. Hayward, on fruit,	270	5	00
		S. M. Hayward, on needlework,	271	3	00
		Mrs. Hiram Steele, do	272	3	00
		Lovecraft & Cornwall, on clothing	273	5	00
		Duryee, Forsyth & Co., on impl'ts,	274	13	00
		John Gray, on vegetables,	275	12	00
		Mary Minots, on poultry,	276	3	00
Septr. 27,		F. Bishop, on butter,	288	5	00
		Geo. C. Howard, on butter,	289	10	00
29,		Chas. Ross, on steam engines,	290	20	00
		David Redman, on vegetables,	291	3	00
		Nancy Mathies, on needlework,	292	3	00
		Mrs. G. Leavenworth, dom. man.	293	3	00

Sept. 29,	Paid W. Shepard, on butter,	294	$10	00
	Matilda M. Bond, on needlework,	295	2	00
	C. W. Barker, on horses,	296	6	00
	Mrs. Geer on needlework,	297	3	00
	John Walker, on implements,	298	5	00
	O. S. Willey, on sugar,	299	3	00
	J. H. Jones, on files,	300	3	00
	Eunice S. Tuttle, on needlework,	301	4	00
	MacDonald Darrow, on fruit,	302	5	00
	G. C. Baker, on horses,	303	15	00
	J. P. Fogg & Brother, on impl'nts,	304	2	00
	E. W. Hartwell, on sewing silk,	305	5	00
	Donald McHardy, on cattle,	306	3	00
	Miss M. E. Conklin, on needlework,	307	2	00
	W. T. Lawrence, on vegetables,	308	2	00
	Freeman Nye, on cattle,	309	6	00
Sept. 30,	J. W. Hyde, on sheep,	310	3	00
	Andrew Hallenbeck, on horses,	311	10	00
Oct. 1,	Nelson Winton, on fruit,	312	3	00
2.	L. R. Haddock, on needlework,	315	2	00
	Mrs. H. Weir, on domestic manufac.	316	16	00
	Henry Weir, on grain,	317	3	00
	L. Campbell, on dom. man.,	318	10	00
	N. J. Becar, on cattle,	319	15	00
	L. G. Morris, on swine,	320	8	00
	do sheep,	321	31	00
	do cattle,	322	125	00
3.	Mrs. Jas. T. Van Namee, on D. M.,	331	8	00
	E. H. Pease & Co., books for premiums,	335	83	50
4.	Mrs. Luman Shepherd, on D. M.,	336	3	00
6.	Sarah Fuller, do	337	3	00
	E. Pexton, on disc.,	338	3	00
	Sarah Fuller, on do,	339	1	00
	W. D. Dickenson, on sheep,	340	42	00
7.	J. Rapaljie & Co., on implements,	341	66	00
	Alex. Ramsay, on plowing,	342	10	00

Oct. 7.	Paid Mrs. Horace Clark, on D. M.,.....	343	$15 00
	N. B. Clark, on churn,...........	344	2 00
	Amos Clark, on D. M.,..........	345	4 00
	Elijah L. Shepherd, on D. M.,....	346	2 00
	Ralph Wade, on cattle,..........	347	20 00
	S. H. Ainsworth, on fruit,........	348	5 00
	Mrs. E. T. T. Martin, on flowers,...	349	4 00
10.	H. N. Langworthy, on melons,....	351	3 00
	Wm. King, do	352	4 00
	Mrs. Juliette Chamberlin, on D. M.	353	2 00
	Anthony Kintz, on grain,........	354	5 00
	John R. Ballantyne, on horses,....	355	5 00
	D. R. Barton, on implements,.....	356	4 00
	Eddy & Co., do	357	8 00
	Mrs. Wm. Bradley, on shellwork,.	358	2 00
	J. S. Wilmarth, on sheep,........	359	10 00
	David P. Byrton, on grain,........	360	5 00
	Allen Ayrault, on cattle, ...	361	3 00
14.	I. Freeman, do	363	10 00
	Wm. A. Mills, do	364	35 00
	Lyman Turner, do	365	15 00
17.	Mrs. Louis Chapin, on shellwork, .	366	13 00
20.	Truman Matteson, on grain, ...	367	5 00
	James Caudle, on vegetables, ...	368	6 00
25.	L. B. Langworthy, do	369	4 00
	G. S. Jennings, on harness, ...	370	2 00
27.	E. C. Bliss, on dom. man., ...	371	5 00
29.	Miss Cath. McKnight, do	380	3 00
Nov. 3.	John W. Taylor, on cattle, ...	383	25 00
	Mrs. John Williams, on flowers,...	384	2 00
	Mrs. Sarah A. Chapin, on dom. man.	386	7 00
	Chas. Benjamin, on cheese,........	387	10 00
	Truman Brown, on swine,.........	388	10 00
	Elias De Garmo, on implements, ..	389	3 00
	C. Parsons, on sheep,............	390	5 00
	Almon Benjamin, on cheese, ...	391	5 00
4.	Hood & Toby, plate for premiums,.	392	18 75

Nov. 4. Paid	Endicott & Co., for diplomas, ...	396	$15 00
5.	Wm. Porter & Co., on disc., ...	397	3 00
6.	Chauncey E. Goodrich, on ex. on potatoes, ...	398	100 00
7.	V. Mix, lettering medals, ...	401	5 50
	Richard Peck, on sheep, ...	403	8 00
	G. Waterman, lettering medals, ...	404	75 50
12.	D. Dick, (World's Fair,)	406	25 00
13.	S. B Buckley, on flowers, ...	407	3 00
17.	Marcus Bickford, on butter, ...	409	5 00
21.	L. E. Smith, on needlework, ...	411	3 00
	Amos Golding, on butter, ...	412	15 00
28.	Ellwanger & Barry, on fruits, &c.,.	413	23 00
29.	Jas. Wadsworth, on cattle, ...	414	23 00
	W. W. Wadsworth, on horses, ...	415	8 00
Dec. 5.	J. C. Ramsdell, on training steers,	417	3 00
6.	A. A. Hudson, on poultry, ...	424	3 00
15.	David Hamlin, on dom. man., ...	426	9 00
16.	E. B. Slason, on harness, ...	427	2 00
19.	J. A. Sherman, on sugar, &c., ...	429	5 00
	E. F. Carter, on honey, ...	430	2 00
	do cheese, ...	431	10 00
	Moses Eames, on cheese dairies, ...	432	30 00
	Hart Massey, jr., on dom. man., ...	433	2 00
	Mrs. C. A. Burr, on needlework, ..	434	3 00
27.	M. L. Hungerford, on dom. man., .	435	10 00
31.	E. Sherman, on grain, ...	484	5 00
1852.			
Jan. 2.	Mrs. B. R. Voorhees, on dom. man.,	486	11 00
3.	Alonzo Havens, do	487	8 00
8.	N. Culver, on fruit, ...	488	2 00
10.	Mrs. H. Walker, on dom. man., ..	490	4 00
	S. S. Wood, on swine, ...	491	10 00
15.	E. H. Pease & Co., premium books,	498	28 00
	C. Van Benthuysen, stamping do., .	501	13 56
	Wood & Hughes, silver plate for p.,	513	255 00

Jan. 17.	W. Baker, on buckwheat,........	514	$2 00
	Robt. Lovett, medals, ...	515	259 25
			$5,155 73

(B.)—State Fair Expenses.

Paid Smith, Cary & Mosely, ribbon,........	103, 104	$12 00
John Leask, making rosettes,............	269	12 00
G. T. Van Dorn, painting signs,..........	278	15 00
John Miles, building refreshment hall,....	279	273 31
M. G. Warner, chairs for do	281	5 50
R. W. Goodrich, services in do	282	10 00
M. G. Warner, provisions for do	280	370 10
C. B. Hill, sundry expenses,.............	283	43 67
W. P. Fogg, do	284	20 00
John Delafield, do	314	124 38
A. Strong & Co., badges,.................	323	30 70
Wm. A. Herrick, do	324	11 00
Elijah Brainard, services, ...	332	5 00
J. M. Cornell, maps of ground, ...	362	12 50
B. M. Baker, carriage hire,..............	372	309 00
Hyatt, Curtiss & Co., printing,...........	373	102 [illegible]
R. Chamberlain, do	374	15 [illegible]
J. P. Fogg, sundry expenses,.............	375	[illegible]
D. M. Dewey, stationery,.................	377	[illegible]
A. Strong & Co., printing,................	378	[illegible]
Lee, Mann & Co., do	379	[illegible]
Gen. L. B. Swan, sundry expenses, ...	[illegible]	[illegible]
Elliott & Fitch, ...	[illegible]	[illegible]
W. A. Langworthy, se[illegible]........	[illegible]	[illegible] 10
J. S. Van Ingen, sund[illegible].......	[illegible]	[illegible]
Charles Kittredge, [illegible]	[illegible]	4 [illegible]
C. W. Seely, clerk i[illegible]	[illegible]	[illegible]
A. F. Chatfield, [illegible]	[illegible]	[illegible]
A[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Paid	I. Harris,	clerk in B. office,	441	$24	00
	J. Springsteed,	do	442	14	50
	J. Alexander,	do	443	22	50
	Geo. H. Loomis,	do	444	19	50
	L. Wetherill,	do	445	6	00
	J. C. Bloss,	do	446	42	00
	N. A. Herrick,	do	447	18	00
	W. C. Bloss,	do	448	12	00
	H. T. Kennedy,	do	449	24	00
	C. R. Davis,	do	450	16	50
	C. M. Haywood,	do	451	21	00
	M. T. Gardner,	do	452	18	00
	E. A. Gage,	do	453	21	00
	S. McDonald,	do	454	21	00
	H. C. White,	do	455	13	50
	W. T. Andrews,	do	456	22	50
	H. H. Lambert,	do	457	12	00
	C. H. Moses,	do	458	37	50
	C. A. Mott,	do	459	19	50
	A. Kirkwood,	do	467	7	50
	John Dow,	services,	460	22	50
	G. W. Platt,	do	461	21	50
	J. S. Reynolds,	do	462	21	50
	W. H. Kirtland,	do	463	27	80
	I. Denio,	sundry expenses,	464	18	00
	Wm. H. Sotham,	do	465	60	75
	Wm. Buel,	forage,	466	314	30
	J. M. Lovett,	assistant treasurer,	468	25	00
	J. F. Batcheldor,	clerk in treasurer's office,	469	16	50
	John Ward,	do do	470	16	50
	J. McElroy,	do do	471	16	50
	C. A. DeForest,	do do	472	16	50
	L. H. Tucker,	do do	473	16	50
	Alex. Kirkwood,	do do	474	6	00
	M. Rochester,	do do	475	6	00
	Geo. Byington, jr.,	do do	476	6	00
	J. T. Holmes,	do do	478	6	00

Paid	G. A. Loomis,	clerk in treasurer's office,	478	$6 00
	H. H. Lambert,	do do	479	6 00
	L. Moses,	do do	480	6 00
	H. T. Kennedy,	do do	481	6 00
	C. A. Mott,	do do	482	3 00
	A. Clark,	do do	483	3 00
	L. Tucker,	sundry expenses,.............	489	11 30
	C. Van Benthuysen,	printing,............	503	203 11
	do	badges,............	504	100 56
				$3,231 49

(C.)—SURVEYS.

1851.			
Jany. 16.	John Delafield, survey of Seneca county, expense of maps, &c.,	9	$577 17
	do analyses of soils &c.,..	10	61 07
			$638 24

(D.)—LIBRARY AND MUSEUM.

Feby. 7.	B. P. Johnson,	Library,.............	36	$4 25
March 8.	do	do	52	3 07
April 4.	Little & Co.,	do	63	10 00
	Ph. Baerman,	do	64	20 00
	A. L. Harrison,	do	65	14 35
May 3.	P. L. Gilbert,	do	77	10 00
Oct. 3.	B. P. Johnson,	do	329	39 50
	E. H. Pease & Co.	do	333	7 31
Nov. 4.	B. P. Johnson,	do	395	5 25
Decr. 5.	do	do	422	0 75
March 8.	Joseph Gladding,	Museum,..........	49	37 98
	J. Steward,	do	51	36 90
Decr. 5.	B. P. Johnson,	do	421	12 00
1852.				
Jany. 15.	do	Library, ...	494	20 56
	C. Van Benthuysen,	do	500	23 00
	A. L. Harrison,	do	512	29 37
	S. M. Parke,	Museum,............	508	10 00

Jany. 15.	L. H. McChesney,	Museum,........	509	$3 50
	W. Gladding,	do	510	23 75
	W. Boardman & Son,	do	511	61 53
				$373 07

(E.)—Postage and Express.

Postage, 37, 54, 62, 75, 83, 91, 95, 99, 330, 420,.....................		$159 56
Express, ... 26, 27, 325, 326,		25 59
Postage,..........................	492	38 03
		$223 18

(F.)—Miscellaneous.

1851.			
Jan. 24.	E. Hollenberg, goods lost at Fair,....	21	10 00
	Thos. Sanford, attendance at an. meet'g,	22	6 00
	W. Wall, do do	23	2 00
	W. J. Johnson, do do	24	6 00
	Thos. Lees, crockery, ...	25	69
March 24.	J. H. Salisbury, analyses of soils,.....	57	38 00
April 1.	W. H. Bogart, reporting,............	60	22 50
March 8.	Gas Company, gas,..................	50	11 21
May 6.	John Disney, storage of tent,.........	78	10 00
7.	J. & E. H. Cary, do	80	3 00
June 1.	Gas Company, gas,..................	84	3 80
Sept. 20.	Insurance of tent,.....................	277	10 50
	Premium on $4,000 draft,............	285	20 00
	E. C. Williams, repairing tents, &c., ..	286	66 13
Oct. 3.	E. H. Pease & Co., stationery, ...	334	69 46
Nov. 7.	Insurance of Library, &c.,...........	405	11 25
20.	Geo. W. Clark, damage of goods at fair,	410	50 00
Dec. 5.	Gas Company, gas, ...	418	3 40
17.	Reynolds & Olcott,.	428	10 23

1852.			
Jan'y 15.	B. B. Kirtland, trial of plows, ...	495	$5 00
	E. H. Pease & Co., stationery, ...	499	29 04
	Harriet Galpin, goods lost at Fair,....	515	4 00
	Chester Clark, do	506	2 00
	Hart Massey, jr., do	507	4 00
			$398 21

(G.)—Salaries, &c.

B. P. Johnson and assistant,	28, 30, 39, 48, 59, 72, 76, 81, 82, 88, 89, 93, 94, 97, 98, 268, 313, 350, 376, 382, 399, 408, 416, 485,	$1,861 63
B. P. Johnson, traveling expenses,.............	400,	38 50
		$1,900 13

(H.)—Incidental Expenses of Office.

1851.	B. P. Johnson,	38, 53, 61, 70, 73, 74, 85, 90, 100, 101, 287, 327, 328, 402, 423,	$155 47
	do	493,	34 87
			$190 34

(I.)—Printing.

1851.			
April 4.	Weed, Parsons & Co.,.................	66	82 75
	Ten Eyck & Co., ...	67	31 68
Nov. 4.	Sentell & Pew, ...	394	2 25
1852.			
Jan. 15.	Croswell & Johnson, advertising,.....	496	1 13
	Ten Eyck & Co., do	497	3 75
	C. Van Benthuysen, printing,........	502	313 33
			$434 89

PRIZE ESSAYS AND COMMUNICATIONS.

PRIZE ESSAY

THE AGRICULTURAL VALUE OF PHOSPHATE OF LIME.

BY JOSEPH HARRIS, ROCHESTER, N. Y.

Phosphorus, an element never found in nature in an uncombined state, but usually manufactured from bones; is semi-transparent, of nearly the consistence of wax; internally of a reddish or flesh color, but coated with a white film, arising from its partial decomposition. It so strongly attracts oxygen from the air as to become slowly decomposed at a very low temperature; and hence it is usually kept under water. When ignited it gives off dense white fumes. This is *phosphoric acid*, and it is in this form united with lime, iron, lead, copper, and other bases, that it is usually found. It enters into the composition of all plants and animals, and is found in all soils not absolutely sterile. The inorganic parts of the bones of all animals are composed principally of this acid, united with lime, called *phosphate of lime*, and wheat, indian corn, timothy, and other cereal grains, contain from forty to fifty per cent. in their ashes. It will easily be seen that it is a substance of vast importance in an agricultural point of view; and when it is understood that no plant will grow on a soil destitute of it—that no soil, however fertile, contains but a comparatively small amount, and that in the bones and flesh of animals, and in the grains of wheat, indian corn, and timothy, it is annually exported from the soil in large quantities, never to return, its real value and importance will be clearly perceived.

The whole of the phosphate of lime which exists in the bones of man and animals, must have been originally in the soil, and being taken up by plants, was, by them conveyed into the animal organism. Under the system of agriculture commonly adopted, phosphate of lime is continually being abstracted from the soil, and unless an equivalent portion to that which is taken is liberated from the soil by annual decomposition, or is returned by the *purchase* of manure containing it, a gradual diminution of fertility must follow. Those engaged in the pursuit of Agriculture, cannot but derive some benefit, from a knowledge of the chemical properties and agricultural uses of phosphate of lime.

As is usually the case, practice got the start of science, in the use of bones as a manure, and without knowing why, the farmer found them of great value to his soil. It is said, they were first used on the natural grass dairy meadows of Cheshire, England, where from the large amount annually taken from the soil, in cheese, and the bones and flesh of animals, the soil had become exhausted of phosphoric acid. Their effect was surprisingly beneficial. They were used with profit, at a cost of from $20 to $60 per acre. Few turnips were then grown, but the value of this crop being acknowledged, great efforts were made to extend its culture, the land owners in many cases *compelling* the tenant farmer to grow a certain number of acres. Bones were found to be the best manure that could be applied to this crop, their beneficial effect lasting for many years. I have seen a crop of turnips three times as large, on a portion of a field where bones had been applied 12 years previous, as on another part of the same field, where none had been used, though treated similarly in every other respect. It is often said that soil dressed with bones, never forgot it when turnips were sown; but this opinion is formed from the lasting effects of roughly broken bones, as first used, at the rate of one hundred bushels per acre; it was soon found, that if they were finely ground, a much smaller quantity would suffice, though the benefit would not be as lasting. The reason of this, is found in the fact, that plants cannot take anything from the soil, but in a state of solution. Now bones in their natural state, are *insoluble* in water, and have first to decompose and be incorporated with the soil, before they can nourish plants. But if finely ground they are easily intimately mixed with the soil; where being attacked by its acids, they readily decompose, and are more speedily rendered in a fit state for assimilation by the plants. Twenty bushels of dust, will in this way be more beneficial, apparently, than 100 bushels of merely *crushed* bones.

The reason why boiled bones are supposed to be better than unboiled, is the same. They have absorbed considerable water, and are in consequence, more speedily decomposed in the soil, and taken up by the plants. Common experience proved the value of bones as a manure, but science had to explain the cause of their beneficial action. This science not only did, but having done so, discovered a plan to decompose these bones before they were applied to the soil, thus concentrating the effect into one, which would have extended over twenty years, or producing a better effect for one year, with a twentieth part of the bones.

There are several phosphoric acid and lime compounds known to chemists, but the only two that concern us at present, are the neutral phosphate of lime, often called the bone earth phosphate, because it forms the chief earthy ingredient of bones; and the bi-phosphate, or as it is called in commerce, superphosphate or acid phosphate of lime.

Pure neutral phosphate of lime contains in 100 lbs.:

Phosphoric acid,	48½
Lime,	51½
	100

The bi-phosphate, or acid phosphate of lime, is composed of,

Phosphoric acid,	71½
Lime,	28½
	100

The neutral phosphate of lime is all but insoluble in water, but the *bi-phosphate* is readily soluble. Now, what science has discovered is, the method of cheaply converting the insoluble phosphate into the soluble bi-phosphate, and simple as it may seem, this discovery has benefited agriculture more than all others combined.

Phosphate of lime consists of two atoms of phosphoric acid and two of lime; and bi-phosphate has *three* atoms of phosphoric acid combined with *one* of lime; now to convert the one into the other, we have either to add phosphoric acid *or take away lime;* the latter is the only way, practical in a manufactory, though the former can be done in the laboratory. Phosphoric being what chemists term a weak acid, sulphuric acid will take away its lime, setting the phosphoric acid free; if but a small quantity of acid is applied it will unite with a portion of the lime, forming sulphate of lime, and setting free its phosphoric acid which will unite with the remaining phosphate of lime, forming the required soluble bi-phosphate. If sufficient acid is not added to convert the whole into bi-phosphate, a portion of the neutral phosphate will remain untouched. If *more* than is required to convert the whole into bi-phosphate is applied, a portion of the phosphoric acid will be liberated and remain uncombined, and by adding sufficient acid the whole may be set free, and the result of the mixture would be *sulphate of lime* and free phosphoric acid.

To exemplify this, let us suppose 100 lbs. of the pure phosphate of lime taken, this would contain 48½ lbs. phosphoric acid; now then if 71½ lbs. of phosphoric acid make 100 of bi-phosphate of lime, 48½ will make 68. Therefore the 100 lbs. of pure phosphate of lime can be converted into 68 lbs. of bi-phosphate of lime, and this is accomplished by abstracting 32 lbs. of lime. The quantity of pure sulphuric acid required to effect this is easily calculated. Sulphate of lime or plaster is composed of:

Lime,	41½
Sulph. acid,	58½
	100

So that 32 lbs. of lime would require 45 lbs. sulphuric acid to convert it into sulphate of lime. Therefore to convert 100 lbs. of neutral phosphate of lime into bi-phosphate, would require 45 lbs. of pure sulphuric acid. If we take away the 32 lbs. of lime, we should have as the result 68lbs. bi-phosphate and 77 lbs. of sulphate of lime.

The composition of bones varies considerably according to the age and kind of animal—less phosphate of lime and more gelatine being found in a young, than in an older animal. But on an average, 100 parts of raw bones may be estimated as containing:

Water,	11	lbs.
Phosphate of lime,	45	"
Fat and gelatine,	38	"
Carbonate of lime,	4	"
Alkaline chlorides and sulphates,	2	"
	100	

It will be seen that besides the phosphate of lime, bones contain 38 per cent. of organic matter, so that in judging of the results of experiments with fresh bones it is necessary to take this into account and not attribute all the benefit to the phosphate. To avoid any discrepancies of this kind we will present the reader with a few results selected from experiments made at Rothamsted Farm, Herts, England, by Mr. Lawes and Dr. Gilbert, in which *calcined* bones were used containing about 90 per cent. of phosphate of lime

TABLE I.—*Turnip Experiments.*

DESCRIPTION OF MANURE.	Bulk per acre in tons, cwt., qr. and lbs.				Leaf per acre in tons, cwt., qr. and lbs.			
	ton.	cwt.	qr.	lbs.	ton.	cwt.	qr.	lbs.
Unmanured acre,..	0	13	2	24	0	14	1	4
12 cwt. sulphate lime, the refuse of tartaric acid manufacture,...	5	13	2	24	2	19	3	12
400 lbs. calcined bone dust, ...	10	4	0	6	3	12	3	12
400 lbs. calcined bone dust and muriatic acid, equivalent to 268 lbs. sulphuric acid (sp. gr. 1,71,).........................	9	9	1	12	4	6	3	12
400 lbs. calcined bone dust and 134 lbs. sulphuric acid (sp. gr. 17	12	18	2	6	3	16	3	2
400 lbs. calcined bone dust and 268 lbs. sulphuric acid, ...	13	11	0	0	4	14	1	4
400 lbs. calcined bone dust*and 134 lbs. common salt, ...	14	10	0	4	6	11	0	10
400 lbs. calcined bone dust and 400 lbs. sulphuric acid.	13	2	2	24	4	5	0	16

* 268 sulp. acid.

The most striking feature in the above selection is the great difference between the unmanured and the manured lots. It is seen that sulphate of lime or "plaster," increases the amount five tons per acre, though yielding a crop which in common practice would not be considered remunerative. But whenever phosphate of lime is used the effect is greatly beneficial. The difference between the decomposed and undecomposed, is not so striking as I should anticipate, but the fact of the bones having been burnt and in a state of minute sub-division, making them more readily soluble, would render them much more efficacious than bone dust as generally applied. An increase of sulphuric acid, from 134 lbs. to 268 lbs., with 400 lbs. of bones in each case, gives an increase of 12½ cwt. of bulk and 17½ cwt. of leaf; but an increase from 268 to 400 lbs. of sulphuric acid, with the same amount of bones in either case, is attended with a *diminuticn* of 8½ cwt of bulb, and 11 cwt. of leaf. This will indicate the amount of acid best to use, and shows, not only the necessity of having the whole phosphate decomposed, but that it is injurious to have phosphoric acid free by using an excess of sulphuric acid; but it is the former rather than the latter evil that farmers need be on their guard against, in purchasing superphosphate of lime. Mr. Lawe's experiments on turnips were commenced in 1843, and have been continued to the present time, during which many interesting and important facts relative to the turnip, and the position it occupies in English agriculture have been brought to light, which it would be inconsistent with the object of the present essay to discuss; but it may be mentioned as amongst the most important conclusions, that if in ordinary agriculture, the turnip is supplied with available phosphate of lime, no other substance need be employed of a mineral or *alkaline* nature; that ammonia is not essential,but that *carbon* in conjunction with phosphate will give an increased crop over the phosphate alone.

The soil on which these experiments were made is a somewhat heavy loam, unsuitable for turnips, which delight in a light sandy loam, so that the above weights per acre, may be considered as much under the amount usually obtained on soils well adapted to their growth.

The following result was obtained by Mr. Pusey in the regular course of tillage; the bulbs only are given:

	Tons.	Cwts.
No manure, acre, ...	1	00
5¼ bushels superphosphate of lime,.........	16	12¾

Great as this increase may appear, yet I think it may be taken as a correct estimate of the benefit usually derived from the application of superphosphate of lime to the turnip crop. But it is as a manure for wheat that we should naturally look for the greatest benefit from superphosphate, inasmuch as this grain contains such a large amount of phosphoric acid.

Mr. Lawes' experiments on wheat, *on a soil similar to the one on which the turnip experiments were made*, and which had been agriculturally exhausted by the growth and removal of four grain crops, without any manure previous to the commencement of the experiments, are very conclusive on this point. Thus the first year gave the following result, which may be taken as an indication of the results of after experiments:

An acre unmanured gave, 16¾ bushels and 1,120 lbs. straw; with 700 lbs. superphosphate of lime manufactured from calcined bone dust, 16¾ bushels and 1,116 lbs. of straw.

The following experiments in the same year, 1844, and on the same field, prove that the failure of the superphosphate was not owing to a deficiency of other mineral manures or ash constituents.

TABLE II.—*Wheat Experiments.*

DESCRIPTION OF MANURES.	Dressed grain per acre in bush.	p'cks	Total grain per acre in pounds.	Straw per acre in pounds.
1. Unmanured acre,	16	0	923	1,120
2. Fourteen tons farm yard dung,	22	0	1,276	1,476
3. Ashes of 14 tons farm yard dung,	16	0	888	1,104
4. Minimum produce of nine plots, with artificial mineral manures, viz: 350 lbs. superphosphate of lime, and 364 lbs. phosphate of potass,	16	1	980	1,160
5. Maximum produce of nine plots, with artificial mineral manures, viz: 350 lbs. superphosphate of lime, 168 lbs. phosphate of magnesia, 150 lbs. phosphate of potass, and 112 lbs. silicate of potass,	17	$3\frac{1}{4}$	1,096	1,240
6. Mean of nine plots, with artificial mineral manures,	16	$3\frac{3}{4}$	1,009	1,156
7. Mean of three plots with artificial mineral manures, and 65 lbs sulphate ammonia,	21	0	1,275	1,423

This table affords pretty clear indications of the requirements of the wheat crop. Mineral manures or *ash constituents* producing no good results, while the addition of 65 lbs. sulphate of ammonia gives an increase of 5 bushels, nearly equal to that obtained by 14 tons barnyard manure.

These experiments have been continued to the present time, and are now being carried on with unabated zeal, at an annual cost of *fifteen thousand dollars.* The scrupulous accuracy and scientific abilities of the experimenters render their results, worthy of the fullest confidence.

The following table exhibits some selected results up to the year 1850, on the same plot of land each year:

TABLE III.—*Wheat Experiments.*

Harvest.	DESCRIPTION OF MANURE—the produce of which is given in the 2d column.	Actual produce per acre.					
		Dressed grain in bushels and pecks.		Total grain in pounds.		Straw in pounds.	
		Unmanured.	Manured.	Unmanured.	Manured.	Unmanured.	Manured.
1844.	Superphosphate lime, 560 lbs., and silicate of potash, 220 lbs.,	16.0	16.3¾	923	1,008	1,120	1,112
1845.	Sulphate of ammonia, 168 lbs., and muriate of ammonia, 168 lbs., (top-dressed at 4 times,)	23.0¾	31.3¼	1,444	1,980	2,712	4,266
1846.	Sulphate of ammonia, 224 lbs., ...	17.3¾	27.1½	1,207	1,850	1,513	1,455
1847.	Sulphate of ammonia, 150 lbs., and muriate of ammonia, 150 lbs., ...	16.3½	25.3	1,123	1,702	1,902	2,874
1848.	Sulphate of ammonia, 150 lbs., and muriate of ammonia, 150 lbs., ...	14.3	19.1	952	1,334	1,712	2,926
1849.	Sulphate of ammonia, 200 lbs., and muriate of ammonia, 200 lbs., ...	19.1	32.2	1,227	2,141	1,614	2,964
1850.	Sulphate of ammonia, 200 lbs., and muriate of ammonia, 200 lbs., ...	15.3¼	26.3½	1,000	1,721	1,719	1,949
	Total in seven years, ...	123.3¼	180.2	7,876	11,736	12,292	17,546
	Mean per annum, ...	17.2¾	25.3¼	1,125	1,670	1,756	2,507

It is seen that in 1844, with mineral manures and no ammonia, the increase of grain over the unmanured plot is less than one bushel, and no increase of straw, while for the next five consecutive years, when ammonia was supplied and no minerals, there is an average increase of ten bushels per acre grain, and about half as much again straw. From these experiments we may safely draw the following conclusions: that the application of mineral manures alone to a soil exhausted by the growth of cereals is attended with no benefit to the wheat crop; that it does not enable the plant to obtain its nitrogen or carbon from the atmosphere; but that on this exhausted soil, the application of ammonia alone produced good crops enabling the plant to assimilate the minerals of the soil and to obtain *carbon* from the atmosphere. That we could not long obtain such an increase by the sole application of ammonia is pretty certain, for however large an amount of minerals there may be in a soil, by annually growing large crops of wheat, and removing the entire produce, they must ultimately be exhausted. Indeed, it is seen in the above table that on the fourth year, 1848, of their supply, ammoniacal salts do not give their accustomed increase, thus showing that there was a deficiency of minerals. A plot in the same field manured with the same quantity of ammonia and a good supply of superphosphate of lime, potash, soda, and sulphate of magnesia, gave a yield of 26¼ bushels and 3,056 lbs. of straw. The next year however, there was as large a yield without, as with minerals, the same amount of ammonia being used in each case, and in 1850, the increase of minerals and ammonia over amonia alone, was but two bushels. From this we conclude that the deficient yield in 1848, was not from *exhaustion* of minerals in the strict meaning of the term, but from a *deficient disintegration*; in other words that the minerals were present, but not in a state for assimilation by the plant, even with a sufficiency of ammonia in the soil.

The following selected results from the same experiments are interesting and confirm the opinions already expressed. They show how intimately any increase of wheat is connected with a supply of ammonia in the soil, and also that the ammoniacal salts are all taken up the first year.

TABLE IV.—*Wheat experiments on the same plot of land each year.*

Harvest.	DESCRIPTION OF MANURE applied per acre, the produce of which stands in the second column.	Actual produce per acre.			
		Dressed grain.		Straw in lbs.	
		Unmanured.	Manured.	Unmanured.	Manured.
1844....	Superphosphate of lime, 560 lbs., and silicate of potass, 220 lbs., ...	16.0	16.3¾	1,120	1,112
1845....	Sulphate of ammonia, 168 lbs., and muriate of ammonia, 168 lbs.,........	23.0¾	31.3¼	2,712	4,266
1846....	Top dressed at four times, no manure applied,........................	17.3¾	17.2¼	1,513	1,455
1847....	Sulphate of ammonia, 150 lbs., muriate of ammonia, 150 lbs., pearlash, 300 lbs., soda ash, 200 lbs., and sulphate of magnesia, 100 lbs.,........	16.3½	25.2¾	1,902	2,874
1848....	Calcined bone dust, 200 lbs., sulphuric acid, 150 lbs., and 150 lbs. each, sulphate and muriate of ammonia,................................	14.3	25.0¼	1,712	2,926
1849....	Sulphate of ammonia, 200 lbs., and muriate of ammonia, 200 lbs.,........	19.1	32.2¾	1,614	2,964
1850....	Pearlash, 300 lbs., soda ash, 200 lbs., sulphate of magnesia, 100 lbs., bone ash, 200 lbs., and sulphuric acid, 150 lbs.,..........................	15.3¼	17.3¾	1,719	1,949
	Total,..	123.3¼	167.3	12,292	17,546
	Mean,..	17.2¾	23.3¾	1,756	2,507

Can any one, after carefully studying the above results, avoid concluding that ammonia is the one thing needful for the growth of wheat, in agricultural quantity. Whenever it is applied with or without minerals there is an increase of wheat and straw; when it is not applied, though every kind of mineral be sown, there is scarcely any increase over the unmanured acre.

The following table gives the result of the application of fourteen tons of barn-yard manure each year, on the same acre of land, as compared with that of the continuously unmanured acre.

TABLE V.—*Wheat Experiments.*

Harvest.	Dressed grain per acre, in bushels and pecks.		Total weight of grain in pounds.		Straw per acre, in pounds.	
	Unmanured.	Manured.	Unmanured.	Manured.	Unmanured.	Manured.
1844, ...	16.0	22.0	923	1,267	1,120	1,476
1845, ...	23.0¾	32.0½	1,441	1,967	2,712	3,915
1846, ...	17.3¾	27.0¾	1,207	1,826	1,513	2,454
1847, ...	16.3½	29.3¾	1,123	1,981	1,902	3,628
1848, ...	14.3	25.2¾	952	1,705	1,712	3,041
1849, ...	19.1	30.3	1,227	2,053	1,614	3,005
1850, ...	15.3¼	28.2½	1,000	1,861	1,719	3,245
Total,.	123.3¾	196.1¼	7,873	12,660	12,292	20,764
Mean,.	17.2¾	28.0¼	1,125	1,809	1,756	2,960

This amount of farm yard manure contains a sufficient supply of minerals for a very large crop of wheat, besides a large amount of carbon and some nitrogen, yet the average increase, taking the last six years, is within one bushel per acre of that obtained by the use of ammoniacal salts alone, and may be considered as dependent on the ammonia supplied in the manure, irrespective of the other constituents. The 98 tons of farm yard manure supplied in 7 years, give a total of 73 bushels dressed grain, and 8,472 lbs. straw or three-fourths of a bushel of grain and 86 lbs. of straw for every ton of manure supplied.

I should like to give several more interesting results, illustrating this subject, but must forbear, as I have already overtaxed the patience of the reader, with "these pesty tables." I have the greatest confidence in the accuracy of these experiments, and in the applicability of them to British agriculture, where farmers never dream of obtaining profitable crops without manure, and where, from the system of culture practiced, minerals relatively to other constituents, will accumulate in the soil; but, in America, where farmers have in many instances exported all the hay, wheat and corn for many years, with a produce not exceeding the yields of the unmanured acre in Mr. Lawes' experiment, it is but reasonable to suppose that many of the mineral elements, especially phosphoric acid, is deficient. In cases too, where the crops have been increased by means of plowing in clover, and other manures grown on the soil, thus supplying nitrogen without any minerals, the soil would so much the sooner be exhausted of the mineral constituents of the plants exported. As the plants usually grown here, contain relatively to potash and soda, &c., most phosphoric acid; (potatoes and timothy are exceptions, and where these crops have been cultivated to a great extent, it is possible the soil may be deficient of potash, rather than phosphoric acid,) and in rearing or even fattening cattle, much more phosphoric acid than potash and soda is exported, and the soil originally, in most cases, as proved by analysis, contains less phosphoric acid than any other mineral ingredient; it may be safely concluded that, if the soil is deficient of any mineral ingredient, it is phosphoric acid; *and as plants will not grow without it, and there has been none supplied, it would be impossible to exhaust the soil of potash and soda, &c.*

Admitting, then, that the soil is deficient in phosphate of lime, what would be the effect of an application of this substance. We have seen that where there was an excess of minerals, and no ammonia in the soil, the average yield of wheat was 17 bushels per acre, ammonia sufficient to produce this quantity being derived from the atmosphere, and supplied to the plants by rain. The variation of from 15 to 23 bushels on the no manure plot during the several years, was caused by a less or greater quantity of rain falling during the growing season. The effect, therefore of the application of phosphate of lime to a soil exhausted of it by the growth of cereals, would be to raise the crop to that yield which would be obtained from a soil having sufficient minerals but no nitrogen in the soil. This would vary according to the amount of rain, from 15 to 23 bushels, provided the soil be well cultivated and clean, and if this be considered a remunerative yield, a soil adapted by texture to the growth of wheat, may, by supplying annually fifty pounds of phosphate of lime, and a few bushels of wood ashes per acre, be made to produce this amount annually for ever, provided the soil be well cultivated.

But we conceive that such a yield will not pay the farmer, and it becomes necessary to adopt some means to increase it. Phosphate of lime or any mineral manure, we have seen, will not do this without a supply of ammonia in the soil. The question is, then, how to obtain this ammonia, and what benefit will be derived from its application. From the above experiments and a great many more we have not been able to give, Mr. Lawes concludes that five pounds of nitrogen are required to produce each extra bushel of grain, over and above the unaided produce of the soil. This, too, accords with the general experience of farmers in the habit of using guano, sulphate of ammonia, &c., in common practice; 300 pounds of good guano containing 17 per cent. nitrogen, giving an increase over the undressed acre of ten bushels.

It has been supposed that as a bushel of wheat contained about one pound nitrogen, if that amount was supplied in the manure it would be amply sufficient. But Mr. Lawes' experiments are so very conclusive on this point that we are obliged to conclude that wheat is a nitrogen destroying plant, or that much more nitrogen is necessary for its growth than is contained in the plant when grown. As a corroboration of this point we may mention, that the experiments of Draper, Dauben and De Saussure, prove that nitrogen is actually given off by some plants during their growth.

We may conclude then that five pounds of nitrogen are necessary for the growth of a bushel of wheat, and it is probable that other grains of the same order, such as Indian corn, barley, oats, timothy and rye also, require more nitrogen for their growth than they contain when fully matured. Now it is obvious that when soil is tilled for the first time, and there is a large amount of nitrogen in the soil which has accumulated by the fall of leaves, &c. for ages, that for a few years great crops will be obtained, provided the land is well tilled; but that these nitrogen destroying plants would very soon relatively to other constituents exhaust the soil of nitrogen and the crop would be dependent on that supplied in the rain, or in applied manure. Soils are then under ordinary cultivation exhausted first of nitrogen and afterwards of phosphoric acid, but that after this stage there is no further exhaustion of any constituent, for no plant will grow without phosphoric acid. If phosphoric acid alone is supplied as manure, potash and soda would next be exhausted; but this is not the case, phosphoric acid alone has not to any extent at least been applied to the lands, and therefore if there is a *deficient yield* of wheat, &c. we must attribute it to a deficiency of ammonia; if the soils that have once grown cereal grains now refuse to do so it may be attributed to a deficiency of phosphoric acid; let this be supplied and a crop of wheat from fifteen to twenty bushels may be depended on. On farms which have been devoted to dairying or grazing purposes, and from which fifty to sixty pounds of phosphate of lime have been removed, in every ton of cheese exported, besides that which has formed the bones of the animals kept on the farm, the exhaustion would be principally phosphoric acid; and as many of the grasses and clover collect nitrogen from the atmosphere, which would after serving important purposes in the animal functions be returned to the soil in the liquid and solid excrements, the farm would relatively to other ingredients become rich in nitrogenous matter, and the application of phosphoric acid supplying an actual deficiency would be attended with very beneficial results. On the other hand, if the exhaustion was caused by the growth of cereal grains, nitrogen would be totally exhausted from the soil long before the exhaustion of phosphoric acid, and it would be necessary to supply this before a *large* crop of wheat could be obtained, though all the mineral elements were present.

It is very evident that the great problem to be solved by chemists and experimental farmers is the discovery of a cheap means of supplying ammonia. That they will succeed in solving it there can be no reasonable doubt. In England and Scotland the turnip is the great source of nitrogen, and its culture is very rapidly extending; one fourth of the farm has for several years past been devoted to this crop, and now under free trade laws and low prices it is found profitable to increase this proportion and cultivate one third and even two fifths of the entire farm with turnips, and this on account of its feeding and nitrogen collecting properties. I am aware there are some objections to the extensive growth of turnips in America; the hot dry summers and severe winters render it difficult to grow them and troublesome to keep them when grown. And I am in hopes that ere long, when the public mind is fully awake to the great importance of this subject, that some plant of equal or superior nitrogen collective powers to the turnip, will be discovered, suitable to the climate and the requirements of the case.

From what has been already said, it will be understood that superphosphate of lime has a magical effect on the growth of the turnip, increasing the crop in one experiment given, sixteen fold. Its effect cannot be accounted for by the supposition of an exhaustion of phosphoric acid from the soil; for, on the same kinds of soils, in Mr. Lawes' experiments, seventeen bushels of wheat per acre were successively removed for seven years, without any manure; whereas, in the turnip experiments—turnips containing much less phosphoric acid than wheat—the plot unmanured gave but a few hundred of bulbs per acre the third year, and afterwards were so small as not to be considered worth weighing, presenting a truly pitiable aspect by the side of those manured with super-phosphate of lime. They threw out roots of a great length in search of food, but the bulbs were no larger than the common turnip radishes.

TABLE VI.—*Turnip Experiments.*

Years.	Acre continuously unmanured.				With superphosphate alone every year.				With superphosphate of lime and mixed alkalies.			
	Tons.	Cwt.	Qrs.	Lbs.	Tons.	Cwt.	Qrs.	Lbs.	Tons.	Cwt.	Qrs.	Lbs.
1843, ..	4	3	3	2	12	3	2	8	11	17	2	0
1844, ..	2	4	1	0	7	14	3	0	5	13	2	0
1845, ..	0	13	2	24	12	13	3	12	12	12	2	8
1846, ..	..	..	..	..	1	18	0	0	3	10	1	20
1847, ..	..	..	..	..	5	11	0	1	5	16	0	0
1848, ..	..	..	..	..	10	11	0	8	9	14	2	0
1849, ..	..	..	..	..	3	15	0	0	3	13	2	8
1850, ..	..	..	..	..	11	9	0	0	9	7	1	12
Total, ..	..	..	..	..	65	16	1	1	62	5	1	20
Mean, ..	..	..	..	..	8	4	2	2	7	15	2	20

The above table shows the effect of superphosphate of lime alone, and of superphosphate of lime and mixed alkalies, applied each year on the turnip plant, the bulbs alone being given. The table speaks for itself, and proves the former assertion that turnips in ordinary agriculture require no mineral manure except phosphate of lime, and it also shows the great value of this manure for turnips, averaging in 8 successive years, 8¼ tons per acre, by its sole application on a soil not well adapted for turnip culture.

Now that large quantities of mineral phosphate of lime have lately been discovered in several places in this country, it becomes a matter of national importance as to whether this can be profitably used to increase the growth of cereal grains or not.

Judging from the experiments of Mr. Lawes, and the practice of the best British farmers, I think that little immediate benefit will be derived from its direct application to the wheat or other cereal crops, but if applied to turnips, or some similar plants, which collect nitrogen from the atmosphere, it will thus, by supplying the required nitrogen, be of immense indirect value to the wheat crop.

It is therefore a matter of experiment how far turnip culture can be profitably adapted by our farmers, and also whether any other plant well suited to the climate, that will collect ammonia from the atmosphere, will be greatly benefited by the superphosphate of lime. I cannot speak from experience as to the feasibility of growing turnips on a large scale in this climate, but am assured by several eminent farmers and gardeners that no real difficulty is in the way. P. Barry, Esq., of Rochester, informs me that he has seen as fine crops of turnips grown here as he ever saw in the best turnip growing districts of England, Scotland or Normandy, and that too, with much less preparation than is found necessary to bestow on the turnip fields of England.

It may not be uninteresting to say a few words on the preparation of the soil and general management of the turnip crop in the best British districts. Of an arable farm one fourth is wheat, one fourth barley and oats, one fourth clover, and one fourth turnips and potatoes; wheat is usually sown after clover, at one plowing, manured with farm yard dung and plowed under. After the wheat is cut the stubble is dragged with a heavy harrow, or cultivator, causing all annual weeds to germinate; it is then plowed deep and well and left in that state until spring, when, as early as the weather will permit, it is plowed again and left till after barley sowing is finished; it is then dragged and cultivated, destroying roots and other weeds which are carried off. It is then plowed again, and the same process of dragging, rolling, &c., repeated. It is then in a fine state for sowing. The land is thrown into ridges by means of a double mould board plow, about two feet apart. The seed should be sown as soon as ridged, while the soil is fresh and moist; about 400 lbs. of superphosphate of lime is sown to the acre, and one to two lbs. of seed. A drill is used which deposites the manure on the ridge and the seed on the manure, a light roller following, slightly covers it.

One of the striking effects of superphosphate of lime is, that it pushes the plant rapidly forward, while in its young and tender state, when it is so liable to be injured by the fly, which before superphosphate was used as a manure for the turnip crop, often utterly destroyed it. When in the rough leaf, the plants are singled out by means of a common hoe, about eight inches apart. They are about three weeks after, hoed over again, and a horse hoe is kept continually going between the rows. This keeps the land clean, and in a light pervious state, so well calculated to receive the full benefit of any ammonia in the atmosphere. The turnip crop completely (except on very heavy clays,) supercedes the long or summer fallow. The great pains thus taken with the turnip, costing three times the labor of the wheat crop, is a sufficient proof of the high value placed upon it in the system of British agriculture.

The sources of phosphate of lime, and its manufacture into superphosphate of lime, now claims our attention. In England, phosphate of lime is obtained from Saldana Bay Guano, "Animal charcoal" or calcined bones, which have been used in the refining of sugar, and lastly and principally from Coprolites; a name given by Dr. Buckland, to the fossilized excrements of the antediluvian animals. Prof. Henslow, who discovered these rounded waterworn nodules in the crag formation, thought from their peculiar form, and the frequency of sharks' teeth and other organic remains found in them, that they were the dung of a former generation of animals; he therefore called them Coprolites, and though this opinion is now admitted erroneous, yet they still retain the name.

The upper and lower green sand formation, also contain nodules of phosphate of lime, which have not been used to any great extent, owing to the superior facilities of working the beds of the crag in Suffolk and Essex, where they are found in unlimited quantities. The mean composition of the Suffolk Coprolites, from several analyses made in the Rothamsted laboratory, may be estimated at:

Bone phosphate of lime with a little phosphate of iron, ...	55
Carbonate of lime, ...	25
Matter insoluble in H C l, ...	20
	100

There is a mineral phosphate of lime, *Apatite*, which has been known to exist in Estremadura, in Spain, for a long period. Dr. Daubeny and Capt. Willington, visited the locality a few years since for the purpose of ascertaining whether it existed in sufficient quantities for agricultural purposes. They describe it as a vein many feet thick extending over miles of country, but situated in a locality where it will have to be transported for a long distance upon the backs of mules. Some tons of this apatite were imported into England, but the price was necessarily much too high for commercial purposes.

It is a hard chrystalized rock of a yellowish white, or greenish color, and composed according to Dr. Daubeny, of

Silica,	1.70
Peroxide of iron,	3.15
Fluoride of calcium,	14.00
Phosphate of lime,	81.15
	100.00

Professor Way in a small portion of this mineral found 85½ per cent. of phosphate of lime. It resembles in many respects the phosphate of lime found at Crown Point, of which we shall speak further on. It contains no carbonate of lime, but the fourteen per cent. of fluoride of calcium is a great objection, as by it the effective strength of the sulphuric acid is considerably reduced; 100 lbs. fluoride of lime requiring 103 lbs. real sulphuric acid to convert it into sulphate of lime. The escape too of the fluorine gas in such large quantities is very obnoxious, and renders the manufacture of apatite into superphosphate of lime not only disagreeable but difficult.

The process of manufacturing superphosphate of lime in the principal factory in England, is as follows: The stones (for such the coprolites are to all appearance,) are first reduced to a powder about the fineness of corn meal. This is accomplished by passing them through two cast iron rollers about eighteen inches in diameter. The first rollers are placed above the second pair, which are *set close together*, reducing the stones to about the size of peas. They are then passed through mill stones similar to those used to grind wheat, but driven with greater speed. The powder is then placed in a large iron vessel *lined with lead*, having within it a number of paddles revolving with great rapidity; water sufficient is added to convert it into a thick cream; sulphuric acid is now added, and the mixture agitated with the paddles, similarly to the process of churning for about five minutes. The semi-fluid mass is then thrown out and placed in a heap, and such is the heat generated by the process that in a few days it will become solid and may be placed in bags. In this factory 1,500 tons are usually placed in a heap, which will remain hot for months; the heat materially aiding the decomposition of the phosphates. Bones alone do not make a solid manure when mixed with sulphuric acid, but if a portion of the mineral phosphate of lime is used with them they form a very valuable and efficacious manure which can be transported in bags and sown without admixture with ashes.

As before stated, the Spanish phosphate of lime, apatite, is too expensive to use for agricultural purposes, yet Mr. Lawes obtained a quantity and made a few experiments with it; which as this substance closely resembles the American phosphate of lime, it may be interesting to give.

Turnip Experiments.

Description of manure used, per acre.	Turnip bulbs. Tons.	cwt.
No manure,....................................	2	4¼
Three cwt. *finely ground* apatite,.....	3	1
200 lbs. apatite, decomposed with sulphuric acid,.......	6	15¾
270 lbs. apatite and 104 lbs. sulphuric acid,............	7	3¼
Five cwt. superphosphate of lime manufactured from calcined bones,..................................	7	14¾

It is seen that 336 lbs. of undecomposed apatite, though reduced to the finest powder, gave an increase of only 16¾ cwt. of turnip bulbs per acre, while 200 lbs. manufactured into superphosphate of lime gave an increase over the unmanured acre of 4 tons 11½ cwt., and more than double that of the undecomposed apatite. The acre dressed with superphosphate of lime from calcined bones, gives a slight increase over the decomposed apatite, but not in a corresponding ratio with the increased quantity applied.

From this we may conclude that mineral phosphate of lime, providing it contain the same amount of phosphoric acid and no deleterious substances, is just as good as that obtained from bones, *when both are made into superphosphate of lime.* If both are applied in their undecomposed state, the calcined bones appear to be slightly soluble, and to have a better effect than the ground apatite. The value of phosphate of lime in England, in such substances as apatite, coprolites, &c., is 24 cents per ton, for every one per cent of bone earth phosphate which they contain; thus, if a substance contains 80 per cent phosphate of lime, it will be worth $19.20 per ton, if 90, it will be worth $21.60 per ton in any British port, in its natural state. If however, it contains but a small per centage of phosphate of lime, and considerable carbonate or fluoride of lime, its value calculated on the per centage of phospate of lime, will be considerably reduced, inasmuch as the substances have to be neutralized before the sulphuric acid will act upon the lime. The price of boiled bones is $21 per ton, or calculating them to contain 60 per cent of phosphate of lime, $7 per ton higher than they would be worth according to the above method of valuation, but it must be remembered they contain some organic matter, which, especially the nitrogen, is very valuable. The wholesale price of superphosphate of lime in London, manufactured from the Suffolk coprolites, which have been described, is $20 per ton. That manufactured from calcined bones, Saldana bay guano, &c. is worth $33 per ton.

We must now consider, as being more interesting to our farmers, the value of the recent discovery of unlimited, almost pure phosphate of lime in the United States, especially that of Crown Point, Essex co., N. Y., and that of the New-Jersey Zinc Company.

The former, we believe, was discovered by Professor Emmons, of Albany, and is supposed to be the richest vein of phosphate of lime in the world. Some selected specimens have been found to contain 90 per cent. of bone earth phosphate. Several barrels have been sent to England for trial, where, provided it can be furnished cheap enough, it will be largely used. The samples sent there do not appear to have been well selected, and contained considerable quartz, which, as the facilities for working the mine increase, will be avoided. A large lump of it was broken up, and a fair specimen taken for analysis by Prof. Way, with the following result:

Composition of the American Phosphate of Lime.

Bituminous matter and water, expelled at red heat,	0.69
Substances insoluble in acid, chiefly quartz sand,	16.79
Silica, (soluble in acids,)	9.65
Phosphoric acid, equal to 62.27 bone earth phosphate,	30 20
Lime,	40 10
Peroxide of iron,	6 47
Magnesia,	1.08
Chloride of sodium,	0.08
Soda,	0.20
Potash,	0.25
Sulphuric acid,	trace.
Fluorine, and loss in analysis,	3 49
	100.00

This is a much superior article to the Suffolk coprolites, though I believe the above is not so good as the average of that obtained from the same source. It is not so hard, and requires but little labor to pulverize it, and hence it will be manufactured into superphosphate of lime, at a much less cost of labor and machinery than the coprolites now used in England. The absence, too, of carbonate of lime, of which 25 per cent. is found in the coprolites, is a *very great advantage*, requiring a much less quantity of sulphuric acid for its manufacture into superphosphate of lime.

It would be useless to give the amount of sulphuric acid needed for the conversion of this article into superphosphate of lime, deduced from the above analysis, for though there can be no doubt that the figures represent the true composition of the sample analysed; yet they considerably underrate the amount of phosphate of lime, which a well selected quantity would contain, and it will be easy for any one to calculate the quantity of acid best to use (the amount of phosphate of lime and lime being known) from the data before given, see page 308. But it must be borne in mind, that when speaking of sulphuric acid, I have referred to the pure anhydrous acid and not to oil of vitriol, or the commercial sulphuric or brown acid. At the end of this paper, will be found a table of Dr. Ure's, showing the amount of real sulphuric acid contained in oil of vitriol of various densities. The "chamber" or "brown acid" of the manufacturers' of sp. gr. 1.7, is the cheapest and most generally used article for the manufacture of superphosphate of lime; 100 pounds of this acid contains 65 pounds of real sulphuric acid; its wholesale price in London, is *eleven mills per pound.* There being but little demand for this article at present, the price is much higher, but as the demand increases, it will doubtless be manufactured on a large scale, at a much less cost. It is now sold by the carboy, in the principal cities, at 2½ to 3 cents per pound. It is not so dangerous to use as most people imagine, and if ordinary care is exercised, nothing need happen worse than an occasional blotch of the clothes, and a stain on the boots, &c.

It is not probable, that the mineral phosphate will be manufactured by the farmers themselves, so that I need not dwell on it any longer. But bones are of great importance, and at the command, to some extent, of every farmer, who would find it much to his interest to convert them into manure for his soil, rather than let them lie bleaching in the sun in some out of the way place, shedding their fragrance on the desert air. Bones if finely ground will do good if applied in their natural state, but their benefit is small and slow, and it is best to decompose them with sulphuric acid, especially as a manure for turnips, ruta baga, young trees, cabbage, beets, &c. To use acid economically the bones should always be finely ground. One hundred pounds of fresh bones contain,

Phosphate of lime,........................	45
Carbonate of lime,........................	4

Now to convert this 45 lbs. phosphate into bi-phosphate of lime, it will be found from data previously given (page 308,) that we have got to abstract 14½ lbs. of lime by sulphuric acid, converting it into sulphate of lime. To do this 20 lbs. of real sulphuric acid would be required, or 31¾ lbs. of brown or chamber acid, (sp. gr. 1.70;) but before the acid will act on the phosphate the carbonate of lime must be converted into a sulphate; to do this 3¼ lbs. real acid will be neutralized, or 5 lbs. of the brown acid, (sp. gr. 1.7.) We have, therefore, in the manufacture of superphosphate of lime from bones to put about 24 lbs. of real sulphuric acid, or 37 lbs. of brown acid, (sp. gr. 1.7) to 100 lbs. of the bone dust.

A good method for the farmer to make his own superphosphate of lime, is: to get a large tub, or end of a cask, place in it the quantity of bone dust that can be best worked at a time, say 60 lbs.; sufficient water should then be added to just wet all the bones, let this be stirred till the dust is all wet, and then add the proper quantity of acid, 22 lbs.; (sp. gr. 1.70,) when mixed, it can be thrown into a heap on the floor, and the process repeated. The operation should be done expeditiously, and the larger the heap the better, as the heat engendered during the process materially assists the acid in decomposing the phosphate.

Some farmers think the above method too tedious and prefer placing the whole amount of dust in a large heap on a wooden floor, wet it with water and apply the acid in small quantities, repeatedly turning the heap and applying the acid till the proper quantity is used. This plan does not require so much labor, but the former insures a more equally mixed, and better manufactured article.

When properly manufactured it will be sufficiently dry to sow by hand without any absorbent substance; but if drilled, as it always should be when used as a manure for turnips, it is necessary to mix with it some dry materials, such as coal-ashes, dry-leached ashes, saw-dust, peat, &c. *But on no consideration let lime, wood-ashes, or any other caustic alkalies or alkaline earth be used.* For a reaction immediately takes place, and the bi-phosphate is converted back again into the bone earth phosphate of lime, and all the labor has been in vain.

Superphosphate of lime, manufactured from fresh bones, is doubtless much the best article if employed as a manure for wheat, corn, timothy, &c., as besides the phosphoric acid, it contains considerable nitrogen. Fresh bones contain five per cent. of nitrogen, which, at the present value of ammonia in guano or sulphate of ammonia, would make bones worth, for this element alone, 50 cents per 100 lbs., and according to the estimate of Mr. Lawes, that five pounds of ammonia will produce an extra bushel of wheat, we might expect a little more than a bushel by the application of 100 pounds of fresh bones. The superphosphate manufactured from the apatite, or as Professor Emmons named it the *euphrycroite*, would be a purely mineral manure, and would have no beneficial effect on wheat, unless the soil was agriculturally deficient of phosphoric acid, and in that case, it would only raise the produce to the natural or normal produce of the soil, say 15 to 20 bushels of grain.

In relation to the discovery of the mineral phosphates in this country, Prof. Johnston has said, "American farmers in general, have not *the knowledge to appreciate the value of such a manuring substance as this, nor the ability to purchase it*, when manufactured into superphosphate of lime; the discovery therefore, will be a boon for the present, to both countries. It will make more abundant and cheap, the means of fertility which our soils require, while by supplying a new article of traffic, only saleable in Great Britain, it will form a new bond of connection between our kindred nations." The English farmers are most loudly and justly complaining of high rents, high taxes, and *low prices in consequence of free trade*, and it is American competition that they most fear. They think that with a good climate, admirable means of transportation, both natural and artificial, a rich new soil which can be had comparatively for nothing, the American farmers will inundate their market with cheap wheat, corn, beef, pork, butter and cheese, and thus ruin them. Now, Professor Johnston with the feelings of a philanthropist, wished to cheer the half broken hearted British farmer in this his hour of need; and to do it, he has unfortunately for the poor farmers, *deceived them*. He has represented this country as scarcely able to raise wheat sufficient for its own population, and that while this population is increasing at an extraordinary rapidity, the wheat soils are gradually loosing their fertility, and that farmers in the rich "Genesee country" are laying their land down to grass, finding it unprofitable to grow wheat at present prices.

The motive of the Professor is at once apparent, and all intelligent British farmers readily perceive it. This laudable motive induced him to assert that the discovery of large quantities of rich phosphate of lime would be of no benefit but to the British agriculturist; that the American farmer had neither the knowledge to appreciate or the money to purchase such an article, &c. A careful reader would be led to conclude that Prof. Johnston was mistaken, for he himself says, that he found the American farmers very intelligent, and generally well acquainted with the geological formation of their soils, and the influence it had on their adaptation to certain crops; and also that they were earnestly seeking all the information that was to be attained from science; that his lectures were listened to with great attention, and that the State of New-York had ordered several thousand copies printed for gratuitous distribution. Does this show an indifference to agricultural science? Undoubtedly not. If the learned professor taught any system of agriculture that could be profitably adopted by American farmers, their love of money if nothing else, would insure its universal and instantaneous adoption. It will pay them to use superphosphate of lime as a manure for American soils, if American farmers have intelligence enough to sow it. If Prof. Johnston really believed what he wrote, the American farmers, I venture to predict, will speedily undeceive him; it will be found that while it is a valuable export and a commodity which British soils require, it will soon be considered not only useful but indispensable to American agriculture. Unfortunately for the British tenant farmer over burdened as he is with rent, taxes, hedge-row timber and game, *which he must keep but not eat*, America will continue to keep down the English market at that price which the British farmer will find hard to sell at and pay a high rent.

If it will pay the British farmer to use the superphosphate, why will it not pay the American? Hitherto the prices of grain and provisions have been much higher there than here; but now prices are nearly as high for wheat and meat in *New* as in Old England, while potatoes, and all kinds of roots, are double the price here that they are there. The answer to this inquiry brings us back to the former position that root crops must be extensively cultivated. That it will be profitable to do so there is no doubt. I have myself had fears that this climate was not favorable to their growth, but facts do not sustain it; and it is now pretty well established that great crops of ruta baga, or as they are called in England, the Swedish turnip, can be easily raised in this country. In fact, some of the crops to which Agricultural Societies have awarded premiums this last fall, were, according to the published statements, much heavier than any crop I ever saw grown in the best British turnip districts, under the most favorable conditions of soil and manuring.

Let it be clearly understood that the great requirement of the wheat, barley, oat, Indian corn, and timothy crops, is nitrogen in an available form *in the soil*—that ruta baga and other varieties of turnips will collect this nitrogen in the form of ammonia and nitric acid, from the atmosphere, and that when they are consumed by cattle and sheep, nearly all this nitrogen is returned to the soil in an available form for the ensuing wheat crops, and that those turnip crops are greatly, almost incredibly benefited by the application of superphosphate of lime, and farmers will begin to cultivate the turnip to a considerable extent, and a new era commence in American agriculture.

I believe it will not pay to purchase guano as a manure for wheat at present prices, but it certainly will pay to use superphosphate of lime on the turnip crop, and thus obtain the essentially important element of guano (ammonia) from the great store house into which the carbonate of ammonia, arising from the decomposition of animals and vegetables, is continually escaping and is brought back to the plants by every shower of rain.

A good crop of ruta baga of twenty tons of bulbs and eight tons of leaves, contains the following substances:

	Fresh.	Water.	Dry matter.	Ash.	Nitrogen	Phosphoric acid.	Potash.	Soda.	Chloride of sodium.	Sulphuric acid.	Lime.
Bulb, ...	40000	36000	4000	280	80	22	123	5	19	28	86
Leaf, ...	16000	14080	1920	230	57	11	50	1½	13	27	26
Totals, ...	56000	50080	5920	510	137	33	173	6½	32	55	112

The consumption on the soil of such a crop of turnips would raise a crop of wheat from 15 to 40 bushels per acre, calculating that five lbs. of ammonia will produce an extra bushel of grain, and this result is obtained by growing turnips over and above their great value as a food for cattle.

Another valuable means of obtaining nitrogen from the atmosphere is by growing red clover. A crop that would make two tons of clover hay would contain 80 lbs. of nitrogen without reckoning that contained in the roots of the plants. Such a crop of clover plowed under or consumed by stock, and all the manure carefully saved and applied to the soil would increase the following wheat crop sixteen bushels per acre. In England it is found unadvisable to grow red clover oftener than once in *eight years*, as if sown oftener the land gets "clover sick" and the crop is a complete failure. The soil of this country, especially of Western

New-York is exceedingly well adapted for clover, and I have seen much larger crops here than is ever obtained in England by the use of the richest artificial manures.

Superphosphate of lime will be found a good manure for clover, especially on soils that are benefited by the application of plaster on the clover crop. Peas and vetches also collect their nitrogen from the atmosphere of which they contain a large amount. For these crops superphosphate of lime is of no benefit. For beans, superphosphate of lime in connection with a salt of potash will be found a good manure. For mangel-wurzel, beets, carrots and parsnips, superphosphate of lime is a good *auxiliary*, and will, if applied in conjunction with barn yard manure, yield immense crops.

For *Tobacco*, I believe superphosphate of lime will be found very beneficial. The seed is first sown in beds, and the plants transplanted when about four inches high into the field. During the first stages of the growth, the plants are liable to be destroyed by insects, and hence any manure that would force them along rapidly out of their reach, would be valuable, this, I think superphosphate of lime will do. Then again, the object of the grower is not to obtain a very large coarse crop, but a small one *perfectly elaborated* with a small per centage of ash. From the effect of superphosphate of lime on the chemical composition of the turnip, favoring as it is known to do, great rapidity of growth and an early maturity, yielding a crop, with a large amount of dry *organic* matter fully elaborated, I think this manure will be of all others, the best to use for the tobacco plant. I have said, that if in English farming the turnip crop was supplied with superphosphate of lime, it would find sufficient alkalies and minerals in the soils; but I must not be understood to assert, that if this manure is applied to the tobacco or cotton plant, it will be unnecessary to apply any other minerals or alkalies. The case is a very different one in England, the turnips, which it will be seen, contain a very large portion of potash, *are always consumed on the farm*, and thus the potash and other minerals are returned to the soil in the excrements of the animals consuming them. But tobacco is all exported from the plantation and consumed by a class of animals, which return nothing to the soil, and as it contains a large amount of mineral matter, it is but reasonable to suppose that the soil will soon be exhausted of minerals, if none are supplied as a manure. Of the cheapest method of supplying the deficiency, I cannot speak, but merely wish to call attention to the use of superphosphate of lime, as a means of producing great rapidity of growth during the first stages of the plant, and inducing early maturity. The superphosphate of lime, at the rate of five or six cwt. per acre, should be sown on the beds as contiguous to the seeds as possible. And when the plants are transplanted, a small quantity, say a teaspoonfull should be placed immediately below the plant in the hill; the deliquescent nature of the superphosphate attracts considerable moisture, and the plants will not be so liable to suffer from drought.

For potatoes this manure cannot be recommended. The application of artificial manures to various agricultural crops is a subject of great interest and importance. But it is one in which the farmer needs to exercise caution, as it is very easy to loose much money, even though their effect is beneficial. It is necessary to know what *increase* a given amount of manure of a certain price will produce, and the value of the produce being known, the farmer can calculate with certainty. For instance, I have detailed experiments in which sulphate and muriate of ammonia were used, with a very beneficial effect on the wheat crop. Yet sulphate and muriate of ammonia, at the present cost of these manures, and the price of wheat, cannot be employed without serious loss. If they should ever be sold at half their present price, or should wheat rise to double its present value, these manures might be used at a great profit. So it is with guano, lime, plaster, superphosphate of lime, or any other artificial manure. Their application may be very beneficial in a *scientific sense;* whether it would be so in an agricultural or economic one, depends on their cost, their effect, and the price of the produce.

At present we have but little data on which to make satisfactory calculations, and they can only be obtained by expensive systematic field experiments, conducted by scientific and practical men. Agricultural papers for the last few years, in America and Europe, have been filled with experiments with artificial manures, but from want of a knowledge of their composition, the previous treatment of the soil, and other incidental circumstances, little positive knowledge can be obtained from them; and though the experimenters are worthy of all credit, yet, had the money which these individual experiments cost, been devoted to *one* experimental farm, whose experiments could be systematically carried out, the state of our agriculture would be very far advanced to what it is at present, and agricultural operations could be carried on with all the certainty that attends manufacturing processes. It has been supposed that a knowledge of the composition of plants, especially of their ashes, would enable the scientific agriculturist to apply the proper kind of manure, and that the crop would increase or diminish in exact proportion as these ash constituents were supplied or withheld. But this theory, however plausible it may appear, and though it has received the sanction of the highest scientific authorities, yet common experience, the infallible test in all the great practical arts, has pronounced this view erroneous.

Many readers of this essay who may have adopted these theories, will be surprised to see superphosphate of lime recommended for root crops, which contain so little phosphoric acid, and so much stress laid on the importance of ammonia for wheat, which is emphatically a carbonaceous grain, as also condemning it as a manure for beans and peas, which are eminently *nitrogenous*. All that can be said is, that however paradoxical they may appear, they are the conclusions of those who have spent years in a most laborious and expensive investigation of the requirements of agricultural plants, both in the field and the laboratory. They are also substantiated by the general practice of the best practical farmers.

Many agricultural writers in this country and England have shown a warmth of feeling on this subject that is perfectly irreconcilable with a love of truth and the advancement of scientific agriculture. They seem to think that individuals had no right to make experiments, however carefully conducted, and certainly no right to publish their results when obtained, especially as they happened to run counter to these gentlemen's theories. All I have to say on the subject is, that experience will very soon decide which of the two systems is right, and as a believer in the French, rather than the German theory of artificial manures I have no fears for the result.

It would have been satisfactory to have given some experiments with the mineral phosphate of lime, in its natural and manufactured state, made in this country, but, though it has been used by a great many different individuals, there are scarcely any experiments published which are at all conclusive on the subject.

B. P. Johnson, Esq., has kindly furnished me with the following: Mr. B. B. Kirtland, of Cantonment farm, Greenbush, used the Crown Point mineral, manufactured into superphosphate of lime on indian corn, at the rate of a table spoonfull to the hill; and by way of comparison on alternate rows plaster and ashes were sown, and on another portion fish manure was used. The result was, the rows which received the phosphate, were the most vigorous, stood the drought much the best, and at harvest had the most good corn. He tried it on cabbages, cauliflowers, melons, with the most marked result; applied it on grass, but with no perceptible effect. But it is proper, also to mention, in connection with plaster and ashes applied at the same time on another portion of the field, gave no visible results.

Prof. Emmons has used it on indian corn, melons, tomatoes, &c., with like effect. I have, myself, never seen it applied to indian corn, but judging from the effect it has on wheat, should think it is not to be expected to do much good, except on soils rich in nitrogeneous matter, and deficient in mineral substances, a condition in which soils that have long been cultivated with cereal crops are hardly ever found. But I shall be happy to alter my opinion, *if experiments*, which I trust will be extensively made this summer, shall prove the contrary. In applying superphosphate of lime, as a general rule, it is advisable to place it as near the seed as possible, as it does not injure the seed if mixed with it, and the rootlets of the young plant, immediately find a palatable nourishment.

I cannot but look on the discovery of this rich phosphate of lime, and its value as a manure for our crops, as a subject of national importance, which will have a great influence in modifying some of the reprehensible features of our present system of culture, and establishing one in which the now immense export of the valuable fertilizers of the soil shall be reduced to that quantity, which the different soils will bear and retain their fertility.

Dr. Ure's Table of the quantity of Oil of Vitriol of Sp. Gr. 1,8485, *and of Anhydrous acid, in* 100 *parts of dilute Sulphuric acid, at different densities.*

Liquid.	Sp. Gr.	Dry.	Liquid.	Sp. Gr.	Dry.	Liquid.	Sp. Gr.	Dry.
100	1.8485	81.54	79	1.6993	64.42	58	1.4660	47.29
99	1.8475	80.72	78	1.6870	63.60	57	1.4560	46.48
98	1.8460	79.90	77	1.6750	62.78	56	1.4460	45.66
97	1.8439	79.09	76	1.6630	61.97	55	1.4360	44.85
96	1.8410	78.28	75	1.6520	61.15	54	1.4265	44 03
95	1.8376	77.46	74	1.6415	60.34	53	1.4170	43.22
94	1.8336	76.65	73	1.6321	59.52	52	1.4073	42.40
93	1.8290	75.83	72	1.6204	58.71	51	1.3977	41 58
92	1.8233	75.02	71	1.6090	57.89	50	1.3884	40.77
91	1.8179	74 20	70	1.5975	57.08	49	1.3788	39.95
90	1.8115	73.39	69	1.5868	56.26	48	1.3697	39.14
89	1.8043	72.57	68	1.5760	55.45	47	1.3612	38.32
88	1.7962	71.75	67	1.5648	54.63	46	1.3530	37.51
87	1.7870	70.94	66	1.5503	53.82	45	1.3440	36.69
86	1.7774	70.12	65	1.5390	53.00	44	1.3345	35.88
85	1.7673	69.31	64	1.5280	52.18	43	1.3255	35.06
84	1.7570	68.49	63	1.5170	51.37	42	1.3165	34.25
83	1.7465	67.68	62	1.5066	50.55	41	1.3080	33.43
82	1.7360	66.86	61	1.4960	49.74	40	1.2999	32.61
81	1.7245	66.05	60	1.4860	48.92	39	1.2913	31.80
80	1.7120	65.23	59	1.4760	48.11	38	1.2826	30.98
37	1.2740	......	25	1.1792	20.38	13	1.0887	10.60
36	1.2654	......	24	1.1706	19.57	12	1.0809	9.78
35	1.2572	......	23	1.1626	18.75	11	1.0743	8.97
34	1.2490	......	22	1.1549	17.94	10	1.0682	8.15
33	1.2409	......	21	1.1480	17.12	9	1.0614	7.34
32	1.2334	......	20	1.1410	16.31	8	1.0544	6.52
31	1.2260	......	19	1.1330	15.49	7	1.0477	5.71
30	1.2184	......	18	1.1246	14.68	6	1.0405	4.89
29	1.2108	......	17	1.1165	14.86	5	1.0336	4.08
28	1.2032	......	16	1.1090	13.05	4	1.0268	3.26
27	1.1956	......	15	1.1019	12.23	3	1.0206	2.46
26	1 1876	......	14	1.0953	11.41	2	1.0140	1.63

PRIZE ESSAY.

SANDY SOILS.

THE OBJECTIONS TO AND ADVANTAGES OF THEIR CULTIVATION AND THE MOST JUDICIOUS AND SUCCESSFUL SYSTEM OF THEIR TILLAGE.

BY WINSLOW C. WATSON, PORT KENT, N. Y.

In a recent familiar conversation with a friend, who is a close observer and of far more than ordinary intelligence, he remarked: "in fifty years, sands will be preferred for cultivation to any other soils." The peculiar sagacity, and strong common sense contemplation of things which eminently distinguish his views attracted my attention to the subject, and as his opinion was so much in accordance with my own, I have decided to submit the result of the observation and experiments of several years, upon which I have formed my opinions. I do not propose to enter into any investigation of the origin of sandy soils, their constituents or combinations, nor to exhibit a scientific analysis of their qualities and properties. I will speak of them as the hand of nature has formed and presents them to the enterprise and labor of man. Large tracts of this land are scattered throughout the state, in some sections predominating, and remain unoccupied and worthless in the midst of beauty and cultivation. The ban of public opinion is upon it. The domain of nature, like man, suffers when impressed with a mark and stigma. If by an improved or more judicious mode of culture, these sandy plains that now disfigure the beauty of our territory, can be reclaimed from their barrenness and desolation, thousands of acres will be added to the producing capacity of the state, millions to its capital and vast masses to its agricultural population. To aid in the consummation of an event so desirable, I offer my humble tribute. I design, briefly to consider the following inquiries: 1st. The objections to the culture of sandy soils. 2nd. The advantages of their cultivation. 3rd. The most judicious and successful system of their tillage.

The objections to their Culture.

Sandy soils do not possess natural and inherent fertility equa to most other earths. This remark applies particularly to their adaptation to the growth of cereal plants, and the more delicate cultivated grasses. The ordinary process, in the laboratory of nature, by which most other soils are made perpetually progressive in their fruitfulness, do not, or but slightly, exercise the same influences upon sandy earths. Lands which produce vegetation, trees and plants, whose foliage is annually shed, are constantly advancing in their fertility. These deciduous particles accumulate for ages, beneath the protection of the native forest, guarded alike from the winds and burning suns, they decay, and in their decomposition yield to the earth not alone the strength derived from its nourishment, but the growth formed and matured by the gases of the atmosphere, and the fertilizing elements distilled from the rains and dews and infused by light and heat. These all combine to form in such forest, that vegetable mold which is the richest of all appliances to soil, and gives to most virgin earth its high luxuriance. Pines and other evergreens of analogous properties, are almost uniformly the primitive occupants of sandy soils, and they restore no such principle to the earth. They are to some extent, deciduous, but the leaflets and cones which they shed, convey to the earth no fertilizing aliment. No lapse of centuries would create a vegetable mold beneath a forest of pines. The material which falls from them remains almost wholly undecomposed. Its residuum infects the soil by sour, acrid, and ungenial qualities, which retard rather than promote fertility. The porous character of sandy soils and their want of cohesiveness, do not adapt them to retain the vegetable deposits, which to a limited extent they do receive, from plants other than the evergreen classes. Their fertilizing qualities are essentially lost, either by washing away, or percolation through the loose earth, or by evaporation. Hence, unlike most original earths, sandy soils are without natural productiveness, and do not yield spontaneously to the first efforts of tillage. Their fertility, in a great degree is artificial, the result of toil and expenditure; immediate and direct remuneration of labor should not with confidence, always be expected. The acid properties of these soils, combined with the pernicious effects of the sheddings from the pine, promotes the growth of a coarse and worthless vegetation, rejected by all animals, and which uniformly, while it predominates in the soil, excludes the culture of delicate and useful plants with any remunerative success. Bushes and shrubs at once spring up and infest newly cleared sandy land, and unless arrested by careful and efficient husbandry will rapidly occupy the entire surface. Until changed by the requisite processes, and these peculiarities are extirpated, sands cannot be occupied with beneficial results, even for grazing purposes. Another very serious obstacle to the improvement of sandy soil is the great difficulty in the early stages of its tillage, in successfully seeding it with grass or clover. An additional embarrassment in the cultivation of sands until they are consolidated by tillage, is produced by the tendency of the earth to be torn from the roots of the plant by the wind, thus subjecting them to be destroyed by the action both of heat and frost.

The advantages of the occupation of sandy soil.

The mere nominal price for which these lands may be purchased, in highly central and desirable localities, in reference alike to situation, market, climate and moral and religious privileges, is a very obvious and important consideration. This saving will go far to supply the means necessary for the expenditures in the first operations of their culture, to which I have already referred. Another fact of primary importance, in this branch of the inquiry, is the immense and certain economy of time and labor, throughout every process of husbandry assured to the cultivator, in the tillage of sandy soils. A light team, which may be purchased at a small outlay and cheaply kept, will perform well and thoroughly in one day more labor on sandy soils than the heaviest team can accomplish in two days on ordinary land in twice that period, upon adhesive clays or rough and stony ground. It is a mere pastime for a good plow boy to turn over his two or three acres of sandy land the day, and in clean, straight and beautiful furrows. The saving of each day in the labor of a team, during the urgent and imperative calls of the spring business upon a farm is of manifest and high importance. This economy of time and labor forms a very essential item in the expense of a crop, and should present a forcible consideration, in deciding upon the relative value of these lands.

The warm and dry properties of sandy soils, induce to the early expulsion of frost. The surface water rapidly disappears, the ground becomes settled and immediately prepared for the operations of husbandry, while many other soils are still in the last embraces of cold and frost, saturated with moisture, and inaccessible to the labors of the cultivator. Sandy soils may have been plowed and sown, and mantled by the rich verdure of their early crops. The farmer who tills massive clays, or cold and damp loams, can appreciate the advantages of sandy soils in facilitating the labors of spring. The operations of the spring upon sand with appropriate management, may have terminated, before the first furrow can have been laid upon clay or loam; they gradually and imperceptibly glide along, and are performed in advance of the season; crops thus early sown, ripen before the fervid heat and drought of summer occur to wither and scorch them, and are gathered whilst other duties are not demanding the attention of the farmer. Throughout their whole culture, the crops of sandy soils, precede the labors claimed by other crops; it is not necessary in the tillage of this soil, to delay the operations of the plow and hoe, to await the settling and drying of the earth after frost or rains. The processes of the season are little retarded by these occurrences; the labors of the plow or hoe may almost immediately succeed the heaviest showers, whilst in more cohesive earths, several days often must intervene, for the subsidence of the water and drying of the earth. Indeed many judicious farmers assert, that a considerable degree of moisture is favorable to the successful plowing of sandy soils; an economy equally great and important as in the operation of plowing, will occur in planting, hoeing and all the subsequent tillage of the planted crop; the varied labors in this tillage, may not only be performed by hand with greater expedition and ease, but labor saving implements may be applied to the cultivation of these soils, with perfect success. The level and smooth surface, which almost uniformily characterize these lands, their freeness from obstructions, their light and open texture, eminently adapt them to the operation of the planter, the cultivator and the hand hoe; the use of these implements in that part of the tillage to which they are adapted, may be estimated as equal to the saving of the labor of eight additional hands, in the cultivation, on sandy land, of hoed crops.

The assertion I am about to make may conflict with the preconceived opinions of many, who, without observation or experience, have embraced the popular prejudices on the subject of these lands. Sandy soils endure the heat and drought of the dry seasons which distinguish our climate, with less prejudice to their crops than most of the heavier and more adhesive earths. It is not my purpose to enter into an elaborate investigation of causes and effects in the arcana of nature, but simply to exhibit the conclusions I have reached in the results of my personal reflections, and the incidents I have witnessed. The fact I have asserted is often observed and discussed. Strong and compact loams and heavy clays, under the influence of extreme and protracted heat and dryness, become hardened and consolidated. Heat neither promotes the solidity of sandy soils, nor increases their looseness. The open and permeable qualities of sand, render it more sensibly affected by the moisture of the atmosphere, and the showers, and copious dews of summer. These genial influences have no effect upon hard and tenacious earths. The dew and the shower make no impression upon these, and are rapidly evaporated by the sun's rays, but the loose texture of the sands imbibe and absorb them, and convey their refreshing and invigorating influences to the roots and fibers of vegetation. The loose and pervious nature of sandy soil adapt it to the growth of the roots of plants. These, penetrating deeply, reach the moisture ascending from beneath, which is attracted by the warmth and dryness of the surface. The minute fibers of corn and other deep-rooted plants, guided by this vegetable instinct, descend in the soil below the influence of ordinary droughts. The fact is universally attested by those who have watched the experiment, that corn upon sandy land, sustains a severe drought with far less injury than upon any other soil.

Winter grain growing upon sands, is seldom affected injuriously by the heaving of frosts, so destructive occasionally to fall crops, on damp and heavy soils; nor is it often injured by the cold and protracted rains of spring and autumn; the water rapidly passes off, and is not retained in the earth, in contact with the roots, rotting them by its continuance or tearing them from the soil by the action of frosts. Such disastrous consequences to crops on other earths, frequently result from the sudden and severe changes of our climate.

Under existing circumstances, another advantage in the culture of sandy soils, is of the deepest importance. They are peculiarly congenial to the cultivation of potatoes. The product of this crop, yielded on these lands when unmanured, is not large, but the quality of the root is preeminently excellent, with an almost uniform exemption from the disease. I have planted, at the present time, seed potatoes of precisely identical qualities, under similar circumstances in every particular, and subsubjected them to the same tillage, upon sandy soils and upon rich and adhesive loams. The crops upon the former were clear and healthy, and that on the latter, almost a total failure from the ravages of the disease. In my own tillage, I have observed the presence of the disease in a potatoe crop, growing upon land in which clay had been artificially incorporated with sand, whilst the crop on each side of it, upon pure sand, was totally exempt. This exemption may not prevail so uniformly, where barn yard manures have been applied. There may exist exceptions to this rule, but the fact is corroborated to my mind, by the most careful observation and inquiry, and constitutes, in my judgment, a strong reason for the culture of these lands. I am so persuaded of the truth of these views, that I have abandoned the occupation of heavy, or loamy earth by the potatoe crop, and use exclusively in its culture, sandy soils, with no other appliances than lime, ashes and plaster. I am now content with lighter products, free from disease, rather than the heavy crops which I have been formerly compelled to leave upon the earth, to rot and taint the atmosphere. White clover is indigenous to sandy soils, and when the foul and coarse herbage to which I have alluded is subdued, the clover springs up spontaneously, and affords the most delicate and nutritious feed, clothing the earth with a rich and beautiful mantle. Sandy soils, I have before stated, are early freed from the influence of frost and moisture, and readily feel the warmth of the sun. Hence, by the rapid growth of vegetation, they yield the first pasturage of spring.

Perhaps the most decisive and peculiar advantage to be derived from the occupation of these lands, is their remarkable congeniality to the habits of sheep. These animals thrive and fatten upon naked and barren pastures on sands where apparently, they can scarce sustain existence. They are equally adapted themselves to the improvement of the soil. No management is more successful in promoting the renovation and fertility of sands than to feed them with sheep, closely and for a succession of seasons. They introduce and promote the growth of clover, that great element in fertilizing sands and by the gentle and perpetual pressure of their feet consolidate, without penetrating the loose and permeable earth. They feed with avidity upon most of the sprouts and bushes which infest these soils, and effectually subdue them. The pines, particularly the red pine, always a product of sandy soils, is an excellent occasional fodder during winter. The sheep eat it readily and its succulent qualities render it wholesome and assimilated to summer herbage. It is affirmed that sheep sustaining themselves by the boughs of the pine and protected by their umbrageous covering, have passed the winter in a vigorous and healthy condition, with no other food or protection. They are not unfrequently recovered from hereditary and epidemic diseases by being removed from damp and cold pastures to a dry sandy range. I confidently predict that the day is not remote when the extensive tracts of sterile and desolate sands which now deform the face of the state, will be devoted to sheep husbandry, and will be esteemed for that purpose among our most productive and valuable lands. This appropriation of them will add immensely to the wool growing interest of the state, and will maintain a wide extent of territory in a condition of constant improvement, in value and fertility. Grain, the product of sandy soils is proverbially well matured, heavy in weight and of superior quality; this remark applies peculiarly to rye. The white rye cultivated, almost to the exclusion of other grain on the wide sand plains of Russia and Poland, and very extensively on similar soils of our own country, approaches so nearly in texture and color to wheat, as to seem rather belonging to that family, than having an affinity with the black and coarse rye grown upon our own damp heavy ground. The application of gypsum, lime, ashes and bone dust, has an immediate and powerful influence on sandy soils, in promoting the growth of the present crop, and in the nourishing and introduction of clover. Cultivation, without artificial assistance, deteriorates most soils, but sandy earths are improved, and their fertility augmented by constant and rigorous, but judicious tillage. Culture, by exposing the land to the influence of the air, dews and rain, and to the chemical action of heat and light, gradually neutralizes the natural sour and acrid qualities of the soil, eradicates the foul and rank herbage, which springs from the effect of that acidity, and prepares and adapts the soil for profitable cultivation. That sandy lands contain a principle of great nutrition to coarser vegetation, and are susceptible of the highest cultivation, is demonstrated by nature herself, by the annals of Agriculture and our own observation. The magnificent pines, which sustained by this soil, often tower to an immense height, and occupy the ground in such numbers, that their roots spreading wide and deeply, with their giant arms interlaced, form almost an unbroken mass of vegetation, attest the existence of some element of the highest fertility. Many of the wealthiest and most productive regions of continental Europe, have been formed from sandy soils, stamped by primitive sterility.

In Belgium and Holland, large districts of their most fertile territory have been created from the drift sands of the ocean, literally wrested by the energy and skill of man from the dominion of the sea. Coke found a large section of England a neglected waste of land, abandoned to barrennees and desolation. His sagacious and patriotic mind saw and felt the evil to his country, and promptly suggested and applied the remedy. He adopted in the renovation of that sterile territory, his system of rotation of crops, the clover and turnip culture and the application of plaster, lime and ashes. That district and others of similar character, pursuing the same system, soon smiled in luxuriance and beauty, and are at this day among the richest, most highly cultivated and productive regions of England. I may refer to various parts of our own state, which afford conclusive evidence that sandy soils are susceptible of most successful cultivation. The issue of the experiment of Judge Buel upon the "sand barren" in the vicinity of the Capitol sufficiently illustrates my position. His experiment was made under the most adverse circumstances. The farm he occupied, embraced a sandy soil possessing scarce consistency and adhesiveness enough to sustain the coarsest herbage, and it was wafted by the wind like a snow drift. Under the influence of science and capital, guided by intellect and enterprise, the lapse of a few years witnessed that farm reclaimed from its barrenness; the disbursements incident to its renovation remunerated, and its surface adorned by the richest crops.

The culture and management.

The most essential practical inquiry is, by what system of husbandry and by what peculiar process sandy soils may be rendered fertile and their culture successful and remunerative. I am aware that in following the views I propose to suggest, the farmer of small means may be repelled, in contemplating the heavy expenditures incident to the system I may indicate. These considerations, to him even, may be countervailed by reflecting upon the original cheapness of these lands, the great economy I have exhibited in team labor in their culture, and the rapid advance in value, in the progress of their improvement. I design in the most brief manner possible, to explain the system of tillage from the primary steps to the complete renovation of the soil, most adapted in my judgment, to secure successful results in the management of sandy lands. My opinions have been formed rather from the light of actual experience and personal observation than from the instruction of books.

The burning of the fallow is necessarily the first process in the preparation of new land for cultivation. Upon pine lands the burning is usually most vehement, and is effectual, generally, in the destruction of the original vegetation, and the noxious deposits from the pine forests, which I have described as so prominent an obstacle to the early culture of these soils. When the ground has been purged by the fire of this evil principle, a crop of grain, (winter rye is the most reliable,) may be sown, and often affords a highly remunerative yield.

The land in connection with this crop should be heavily seeded, and with a great preponderance of clover. Unless the land possesses unusual and continued moisture the succeeding product of grass will not be sufficient for mowing, but often affords considerable pasturage. It will not however continue even for this purpose, but in course of a season or two will be overwhelmed and extirpated by a rank growth of natural herbage peculiar to the soil, until renovated by culture. Still I think the process judicious, as it affords to some extent a useful occupation of the land, whilst the process of decay is going on, with the original roots and stumps which remain in the earth. A very few years accomplish this result and their decay immensely facilitates all the operations of tillage, whilst their removal is indispensable to the fertilizing of the soil. If the pecuniary means of the farmer permits of plowing at once and without waiting for the decay of the roots it is preferable, as the delay of one or more seasons will thus be avoided, but under such circumstances the work can only be performed at an enhanced expense. Thorough and repeated plowing is the great and essential process in the preparation of sandy soils for high and successful culture. Numerous benefits are communicated to the soil by this operation. The more frequent the process the more decisive and immediate will be found the result. The opening of the earth to the powerful effects of heat and light, to the action of the air, and the absorption by the soil of the fertilizing gases which nature affords for the sustenance of vegetation, are among the agencies by which the inert and dormant principles of fertility in sandy soils are excited and invigorated.

By these subtle and mysterious influences, the acid and noxious principles of these soils are neutralized, and thus are preparing for the operations of husbandry. Successive and complete plowing, even recurring in the same season, is highly advantageous in reference to another result. Rank herbage excited by the acidity of the soil, and by the first action of these fertilizing influences upon it, springs up spontaneously, and often covers the surface with a luxuriant growth. This green and succulent vegetation, worthless for all other purposes, is turned beneath the furrow, by every operation of the plow, and fermenting and decomposing, yields a large amount of vegetable manure. The immense value and importance of this application, is soon manifested by the improved condition of the earth, and it creates a rich basis for future agricultural processes. The utility of this management may be increased, by strewing after each plowing and slightly draging in, buckwheat or similar grain, and turning the crop under, when in full flower. A large aggregate of vegetable mold, forming an organic basis in which sandy soils are naturally deficient, would in one season, by this tillage, be incorporated with the earth. I am decided in the opinion, that repeated plowing in the early stages of the processes with this management without cultivation, will promote more rapidly and with more satisfactory results the improvement of the land, than the occupation of it even by hoed crops. These crops are most valuable and efficient agents, in subduing the coarse vegetation, I have described. After the vegetable mold formed by this decomposition has become embodied in the earth, constituting in it an organic principle, gypsum may be applied with eminent advantage. Until the soil has attained that condition which results from these or similar combinations, I have discovered no apparent utility in the application of gypsum. Ashes, lime, charcoal and salt, (and doubtless bone dust,) are most beneficial applications to sand. The effect of each, is in some particulars analogous, acting not alone, as a direct and positive fertilizer, but exerting a permanent and most powerful influence upon the soil by its chemical affinities. Ashes unite with the particles of sand, and whilst they reduce by their effect as an alkali, the native sourness of the soil, the combination forms a new substance, far more compact and adhesive, than the pure sands. An inquiry into the properties of these substances, and the processes by which they act upon the soil would involve researches too elaborate for the present object. Salt, in addition to its other beneficial influences, is an invaluable application, from its affinity and attraction of atmospheric moisture. In the severest drought, you may discover, long after the dew has been exhaled from the ground, around every particle of salt large enough to be detected, a circle of moisture, derived from the atmosphere; lime and ashes to a limited extent, possess this deliquescent quality. Guano and all the concentrated manures, unquestionably exert a powerful agency on sandy soils. The strawey and unfermented products of the barn yard, are too heating and opening to the ground, to be applied in a green and undecomposed state. When in a rotted condition, or as a component of a compost, they may be applied with the most beneficial results, and on no land do these animal manures exert a more direct and powerful effect. All these manures, including lime, clay and green crops, should be buried by the furrow and completely harrowed, to effectually incorporate them with the earth. If exposed broad cast upon the surface, a part becomes hardened and insoluble under the influence of heat and dryness, and the fertilizing elements of the remainder are borne away by the atmosphere, in the form of volatile gases.

No appliance to sandy soil is more immediate and efficient in its operation, or enduring in its effects than the mixture with it of heavy and tenacious clays. The benefits are produced by both physical and chemical causes. Clay contains ingredients which combining with sand, exercise a direct and positive fertilizing influence. They unite with the particles of sand by their chemical affinities and form an element of great fruitfulness. The great and invaluable advantage resulting from the mixture of sand and clay is the formation of a new soil, combining in just proportions the useful elements of both, but far excelling either in its agricultural capabilities. It is exempt from the cold and damp qualities of clay and affords to the sand, the characteristics it requires, firmness of texture, solidity and adhesiveness.

This artificial compactness renders it less affected by violent winds and more retentive of manures and moisture. Until sandy soils acquire by tillage a cohesiveness that corrects its natural permeability, the effect of most fertilizing ingredients upon it is feeble and transitory; they either leach through the earth, or pass off by evaporation. Clay corrects this inherent difficulty, in the improvement of sands, and the effect of the combination of the two earths upon the soil is permanent and inexhaustible. It forms an enduring foundation for the successful application of all other manures whether animal or vegetable, organic or inorganic. The permanence of the effect, and the beneficial results in improving the fertility of the land by this system, I can illustrate by the statement of an experiment under my own observation. A few years since I broke up and planted to corn a clover lay upon sandy soil, embracing an area of about ten acres of land. Upon an acre of this ground, more than twenty years before, thirty loads of clay had been deposited, and had become thoroughly incorporated with the sand. The ground in every other respect possessed the same character and qualities. It was plowed at the same time and subjected to the same tillage in every detail. Immediately on the appearance of the young sprouts the crop growing upon the mixture of sand and clay, exhibited a more vigorous growth, with a deeper and healthier color. As the crop advanced, the difference increased and the boundary of the acre became as distinctly marked by the appearance of the crop as if it had been separated by a hedge from the residue of the lot. This appearance was so remarkable as to attract the constant observation and inquiry of strangers as to the causes of the marked and peculiar distinction. The part of the lot containing the clay was little injured by the grub and worms, although the remainder suffered severely from their ravages. The crop of the entire field was excellent, but that grown upon the acre of clayey sand, yielded almost twice the harvest, in both grain and stalks, of any other acre. An experiment so full and decisive has been conclusive to my mind as to the advantages of applying clay to sandy soils and the permanence of its effect. Clay is the usual substratum of sand, and a deposit of it almost uniformly exists, accessible to every sandy farm. It cannot be applied fresh from the pit in its original adhesive condition as advantageously, as after its particles have been separated and pulverized by the action of rain and frosts. In the crude state it remains stiff, hardened and insoluble, and not uniting with the sand, but when pulverized it readily assimilates with the soil, and becomes a component part of the general mass. Peat or muck, is another ingredient, which may be used with the most signal utility for the renovation of sandy soils. Few farms are destitute of this inexhaustible element of fertility and wealth. Muck is a vegetable deposit, and in its original state but partially decomposed. It is at this time imbued with cold, sour and ungenial properties, incapable of cultivation. Whilst these native qualities remain unmodified by nature or art it possesses no fertilizing principles, and its application imparts no productiveness to any soil. Two modes may be adopted to prepare it for useful application to the land. After being thrown into heaps, let it remain to be drenched by rains, and penetrated by the atmosphere, and for one season to the powerful action of frosts; or the same required decomposition may be produced by the application of quick lime to the center of the heap. By this process its latent fertility will be stimulated, its cold and acrid qualities extirpated, and its ingredients reduced to a rich and friable loam, among the most valuable fertilizers of sandy soils. In the other course, the muck is transported to the barn yard or hog pen, and is left for a season to be trodden and poached by the animals. By this management, the liquid manures, so generally wasted by improvident husbandry, are absorbed and preserved. The muck being thus incorporated with the animal manures, is decomposed by the same fermentation, and acquires equal productiveness. Having passed through these processes, it is prepared for use. Another operation to which I have already incidentally alluded, and which is scarce second to any other in the improvement of sands, is the plowing under a crop, (or successive crops is still better,) of growing clover or buckwheat. The effect of this system upon the soil is various and highly useful. A heavy amount, equal to several tons weight of luxuriant vegetation, is imbedded in the earth. This deposit rapidly decays, and in the fermentation which ensues, evolves a vast volume of fertilizing gases, which enter into and are absorbed by the superincumbent soil. The residum of the decomposed crop mixes and amalgamates with the sand, and yields to it both cohesion and fertility. Besides these direct physical benefits, a basis is formed in the soil for the efficient action of gypsum and the more concentrated manures.

I have already explained some of the advantages derived from the appropriation of sandy soils to sheep husbandry. I will now only enforce my views on that subject by a few additional suggestions. The presence of these animals promotes the successful results of most of the processes I have described, and has an immediate agency in the rapid amelioration of these soils. Where this system is mainly relied upon for its renovation, sandy land should be subjected to a close and severe sheep pasturage. The number of sheep which an apparently barren and desolate waste will sustain, is incredible to a casual observer. The sheep are fattened and the land rapidly subdued and fertilized. The extirpation of bushes and natural herbage by the grazing already referred to, is among the eminent benefits derived from this system; but still more important and valuable is the promotion by it of the growth of delicate and nutritious grasses. White clover is natural to the soil, and is nourished and diffused by a range of sheep. It gradually spreads over the surface of the earth, covering it with a network of its delicate fibers, and forming a vigorous and tenacious turf. This turf protects the soil from the influence of the sun and wind, and binds it together in close cohesion. The sward thus created constitutes the basis of future tillage, and when decaying beneath the furrow, yields its nutrition to promote the growth of subsequent crops.

Sheep scatter their excrements so universally and in such minute quantity that they exert a strong fertilizing influence upon the soil. The droppings of larger animals are so copious as to destroy all vegetation where they fall, and thus pastures are rapidly deteriorated by the introduction of coarse and worthless herbage that springs up, in the rank earth formed from these deposits. One of the most successful cultivators of rye I ever knew, habitually, and as part of a deliberate system, allowed sheep to range in his rye field, upon sandy soils, until the approach of June. His theory was simple; he maintained that they fertilized the land by their droppings, that their tread consolidated the soil and prevented the harsh and dry winds of spring from laying bare the root of the grain, and that the spindling growth, so often produced by the period of hot and dry weather generally occurring in the early part of the season, was prevented, a vigorous expansion of the roots secured, and in the end a vast increase and a more healthful and rapid growth of the sprouts. His neighbors wondered and doubted, but his exuberant harvests always seemed to vindicate the wisdom of his conclusions. Sheep, by their browsing, preserve the land from the intrusion of most noxious plants, but some, such as sweet fern, brakes, and scrub oaks, they reject. In the suppression of these we must resort to the plow and hoe. In the prevalence of droughts sandy earths should be moved as frequently as possible, in order that they may more effectually imbibe the dews and atmospheric moisture.

A systematic rotation of crops well arranged and judiciously pursued, accomplishes upon sandy soils the most favorable results. No other earths are more effectually improved by the application of this system; the process is more gradual and protracted, necessarily, than if rich animal manures were applied, but the renovation and fertility of the soil, will proceed rapidly and be ultimately attained. When the impediments to culture, inherent in the soil, have been overcome by the operations I have endeavored to explain, and a turf (the more massive and vigorous, the more favorable will be the result) has been formed, an essential point has been attained for the commencing of the rotary system. The weight to the acre, of this sward, is immense, as has been determined by accurate analysis. This is inverted by skilful plowing, and communicates to the earth, in its herbage, roots and fibers, an amount of nutritive substance equivalent to a light dressing of animal manure. It forms a vegetable mold in its decay, which is not only the pabulum of the succeeding crop, but constitutes a retentive sub-soil, that preserves the moisture received from the surface, and holds the juices percolating through the earth for the nourishment of the plant. Let a hoed crop succeed the first plowing in this rotation, and be aided by an application to the hills, of plaster, or a mixture of plaster, lime and ashes. The second plowing, intermingles the vegetables manured with the sand, and prepares it for a crop of small grain; with this crop on the second year, the land should be heavily seeded with clover, slightly mixed with herd grass. Permit this clover lay to remain in meadow or pasture, the two ensuing years. If the seeding has been favorable, the turf will be firmer and more tenacious than before the first plowing. After the lapse of these two years occupied by grass, again break up the turf and repeat the same course of cropping. At the second series the land will have become more fertile and of course the culture more remunerative. The soil will gradually assume a different aspect and the indications of vegetable mold will become darker and descend deeper. A sandy soil may be maintained by this system judiciously pursued and without the aid of artificial appliance, in the constant progression of its fertility. I have now only spoken of the capacity of sandy soils for improvement by these alternations of cropping, seeding and plowing, without the aid of any external and artificial appliances. No soil yields a richer return for the most munificent application of manures, and few can by those means be carried to a higher degree of productiveness.

Irrigation when applied so gently as not to derange the structure of the earth, is of the first importance to sandy soil, and preeminently so when lying in grass. The presence of rocks in position, or promiscuous stones, always indicates a superior soil in sandy lands. A regard to this fact is important in selecting land and deciding on the appropriate course of crops.

Plowing.

The theory I have advanced in relation to the importance of the frequent plowing of sandy soils, I am aware is in conflict with a very prevalent opinion, that plowing injures these earths by increasing their original looseness. These views may be partially correct, if we regard the solidity of the surface alone. The constant pressure of animals in grazing, and the fibers of the scanty vegetation which may occupy the ground, will give an apparent compactness to the land. It is only superficial, and the system can never renovate or fertilize the soil. Plowing and tillage change the whole texture of the earth and communicate not only fertility, but compactness and cohesion to the mass. Deep plowing is highly useful in sand, but not so indispensable as in the culture of heavy and tenacious lands. The tillage of a few years impresses upon sandy soil a new appearance equally with new qualities; it looses its natural aspect of inertness and sterility; it changes its color with its texture, and assumes an aspect of life and vigor. This is not merely the consequence of manures embodied in it by cultivation, but is also imparted by the action of light and heat. Now the deeper this inert soil can be penetrated and exposed to these influences, the more complete and beneficial the effect upon the earth and crops.

The period in which plowing should be performed, must be governed by the circumstances of each case. It should not be performed in excessively dry weather, as it then has a tendency to expose the vegetable decomposition in the soil to exhalation, and leave it in a loose condition. If animal manure or a turf has been turned under by the preceding plowing, the land should not be again plowed, under circumstances that will expose them upon the surface, to the effects of the sun and wind. A green sward, should be plowed late in autumn. Myriads of insects and worms will thus be destroyed by the frosts of the ensuing winter, and the vegetation, buried beneath the furrow, will be in a state of fermentation and evolving its gases, at that period in the spring, when the roots of the young plant will most be aided by its warmth, and most require its nutrition. Frequent plowing often forms, by the tread of the team and the pressure of the plow at the same depth, a firm encrustation, alike impervious to the moisture ascending from below, and the passage of the surface water, or the penetration of the tender roots of the growing plant. The pernicious effect of this formation, in season of drought, upon the crop, is at once appreciated. The application of a sub-soil plow, beneficial in many respects, would promptly remove this evil.

Crops.

Rye or buckwheat are the most appropriate crops upon a fallow previous to any plowing. No sowed crop is so well adapted to this land after the first plowing as peas. They are congenial to the soil, their growth is promoted by gypsum, they derive nutrition from the atmosphere, subdue coarse vegetation and leave the ground clean and prepared for other crops. When the ground is well pulverised by careful plowing, corn, beans or potatoes may be planted, and with manures if practicable. This tillage even without animal manures tends to improve and subdue the soil, and often yields a profitable crop. Corn is peculiarly adapted to the soil at this stage of its culture, whilst its native qualities predominate. The constant operation of the hoe which corn requires, and its rank growth, arrest the progress of bushes and coarse vegetation, whilst its powerful and vigorous roots penetrate in pursuit of moisture and aliment, deeply and through obstacles which would resist more delicate fibers. The rows or hills of corn should be planted nearer together than on heavy lands. The seed of the potatoe requires in sand, deep planting. Neither the hills about corn, potatoes or beans, should be much elevated, but should be formed low, and flattened upon the top. A slight handful of plaster, lime and ashes, deposited in the hill with the seed of each of these crops, has a useful effect in preserving it from worms and grubs, in promoting its vegetation, and nourishing the growth of the young plant.

When sandy soil has acquired by these processes, vigor and fruitfulness, wheat may be cultivated with great success. The quantity of the product will be remunerative and the quality of the grain most excellent. An error prevails, I think, in sowing the small grains on sandy land, we think, before the soil is sufficiently enriched to sustain a vigorous growth. When this course is pursued, the straw is light, the heads of the grain small and badly filled If the seed is sown sparsely, the growth of the crop is stronger and higher, the heads well filled, and fully ripened. In my own tillage, I use in sowing rye from five to six pecks of seed, depending in some measure upon the season. I may appropriately remark here, that every crop occupying sandy soils, should be planted early in its season. The philosophy of this most important fundamental rule, must be apparent to every mind, and loss and disappointment are constantly entailed by a neglect of its admonitions. Rye should be sown by the 1st of September. Oats and other small grains, as soon as the ground becomes dry and settled in the spring. Corn and the hoed crops should be planted as early as practicable with reference to their exposure to the late frosts of spring. I apply to the acre for seed, from four to five pecks of wheat; about three of buckwheat; two bushels of peas, and from two to three bushels of oats. I use, in seeding for grass, from eight to twelve pounds of clover seed, intermingled slightly with herds grass.

Many intelligent and observing cultivators assert that red top grass may be favorably used for seeding sandy lands, if designed for subsequent pasturage. I have in progress an experiment to test this fact. If this grass can successfully be appropriated to this purpose, highly valuable results may be anticipated, not only in the great saving in the expense of the seed, but also in the rapid and economical improvement of the soil. Red top forms a more enduring turf than either herds grass or red clover, and spreads over the whole surface a massive and tenacious sward. Its use therefore, in the culture of these lands, and its great benefits, will be at once understood.

I have thus presented a brief outline of the opinions formed by careful and varied experiments, and mature reflection. I do not impute to them much originality, nor do I suppose the practices and system I have suggested, will be always unerring in their favorable results. My object has been public utility, and I shall be satisfied if I succeed in any degree in exciting the popular interest, or in attracting inquiry to a subject of great and growing importance.

ON THE CULTURE OF PARSNIPS.

BY COLONEL LE COUTEUR, OF BELLEVUE, JERSEY.

In our Transactions for 1850, an analysis of the parsnip made by J. H. Salisbury, M. D., is given at page 347. From this it appears that this is a valuable root for-feeding purposes The accompanying article on the culture of the parsnip received from *Col. Le Couteur*, of the Isle of Jersey, will doubtless be not only interesting, but it is hoped useful to our farmers in calling their attention to this valuable root, which may be cultivated to advantage in this State. As the parsnip requires heavy manuring, it will leave the land in good condition for a succeeding crop. Its value as food for milch cows is clearly ascertained—the tops as well as the roots being well adapted to the purpose.

Among the great improvements in Great Britain, none show so prominent as their green crops. The introduction of the turnip culture has doubtless wherever introduced, been the means of largely increasing the profits of the farmer. In the return it gives for feeding and for manure, as well as the excellent preparation it secures for other crops, its advantages can scarcely be over-estimated. The attention which our farmers are giving to the feeding of cattle and sheep for market, will require all the aid that can be obtained to make the business successful. As a means to accomplish the most for this object, it is probable that the introduction of root crops to a much larger extent than is now practised, will, when the crop can be grown advantageously, form one of the very best auxiliaries. We have the Indian corn, which they have not in Great Britain—but for a more successful culture of the soil, the introduction of a root crop in our rotation, will be found we are satisfied, of very great value.

BROAD-CAST HUSBANDRY.

Nature of Soil.—The parsnip will thrive in any deep land, whether stiff or light; it succeeds here admirably on soil resting on granite or sienite, on argillaceous schistus, on red clay, or on a gravelly bottom; on almost pure sand if mixed with a light coating of earth, and on soils derived from pudding-stone, or white and red feldspar. This includes most of the soils of the British islands, exclusive of the chalky or limestone ranges which are unknown to us. It is proper to add, that some cultivate this plant on poor black heath soil, not above seven or eight inches deep, and by means of heavy dressings of manure raise a good crop; but the parsnip in such situations forms a large shoulder, and forks away into fingers, when near the hard sub-soil; whereas in very deep land it will run down a foot or two, of a good size, and sometimes appear with a long whip-thong, as it were, to its thick handle.

An old grass ley is broken up by some persons in September, by others just before the parsnip seed is sown. The former I consider to be the best mode. When the turf is well rotted, 20 tons of stable manure per acre are spread over the land. A trench is then opened through the center of the field, between 2 and 3 feet wide, and, where the soil will admit of it, from 1 foot to 18 inches deep. A small 2-horse plow then turns the manure and about 3 inches of soil into the trench, and is immediately followed by a large trench-plow with three or four, and in many cases here with eight or ten horses, which turns a foot or more of clean soil upon the manure and scurf, when the land has been recently skim-plowed.

Quantity of Seed.—The soil is then harrowed, and the parsnip seed, which should be new, is sown at the rate of three or four pounds to the acre, and lightly harrowed.*

Weeding or Hoeing.—When the plants are an inch high they are to be weeded—this was formerly contracted for at the high price of £2.5s per acre, ($6.80,) to be repeated thrice by hand in the season, and to leave them without a weed; but this extravagant mode has given place to hoeing, which can be done at less than half the cost, and is probably more beneficial, as it stirs the land deeper.

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* I have some fine-looking parsnip-seed which was saved two years previously, and has ever since been kept in a perfectly dry place, not a grain of which will vegetate, though some has been soaked, and sown in the green house, in order to test its vegetative power.

In Guernsey a still more expensive mode is adopted, that of weeding with a hand hoe, having a straight blade of iron, eight inches long, four or five inches wide at its edge, narrowing upwards to a short handle a foot long, with an elbow to it nearly at right angles; the blade is pressed into the earth, and the crooked handle affords a leverage, which enables the person to stir it effectually and destroy every weed. This is mentioned incidentally, as it is too slow a mode for the rapid principle which has now obtained in all things: however it may be a question whether a greater crop was ever raised by other means than one produced in the ordinary way, which I shall presently mention. The plants from the first are to be thinned out to six inches apart, and according to the soil should be again thinned out to nine inches or more at the second hoeing. In September, when the fine aftermath begins to appear, some of this crop may be taken up for milch cows, as from a dozen to 25 pounds of them, given at milking time, will have a surprising effect upon the cream, and produce fine yellow butter, which will keep admirably if properly salted and prepared, preserving an excellent and superior flavor. Parsnips are usually taken up with a stout three pronged fork, but a more speedy method will be described in the drill system.

DRILL HUSBANDRY.

The land may be prepared as above described. In one case I found the plants to answer well by spreading a portion of the manure on the surface of the plowed land, and then earthing it up into small ridges, a foot apart, with a double mold board plow.

The seed was then sown on the top of the ridge and rolled in, which succeeded extremely well. The hoeing was performed with a hoe-plow in the drills, and the plants were cross-hoed with a hand-hoe. This mode does not appear so neat as the following:—When the land is well harrowed and levelled, sow the seed broadcast, harrow and roll it; then, when the plants appear, hoe it into drills, either with a hoe-plow or hand-hoe. A drill machine would be the best method, if one could be found, to sow parsnip-seed regularly; mine sows it much too profusely. The parsnips require hoeing and thinning as in broad-cast husbandry. In a dry season it is well to observe, that moistening the seed with wet sand or earth, and stirring it daily, to be sown in the first moist weather, or after a shower, will forward its growth a fortnight.*

Housing.—The crop should be taken up in October or November, though parsnips are not much injured by frost, and probably, if earthed up by a hoe-plow might remain in the ground the whole winter. The late great improvement in taking them up has been to substitute a plow for the fork.

A plow with a blunt or worn out share, and without a coulter, being drawn by a pair of horses, along or across the ridge, as is most convenient, the pressure of the plow and earth forces the plants out of the ground; and although a small portion of the long tapering root is sometimes broken off, yet the time saved by thus raising them, and afterwards throwing them out of the loosened soil, as is done with potatoes, is an enormous gain of time over the ancient practice of forking out each parsnip from the solid ground.

Usual weight per statute acre.—The average crop per statute acre may be from nine to eleven tons, but in the eastern district of Jersey last year, the visiting committee of the Agricultural Society, proceeding to examine crops of parsnips in competition for a premium, were unable to distinguish, by mere inspection, which was the finest of three; the plants in each appearing, from their luxuriance, to cover the soil, and be nearly alike. On proceeding to proof by digging up a square perch of 22 feet of each, one was found to produce 325 lbs.; the second 425 lbs; and the prize crop 634 lbs., Jersey weight, or the enormous quantity of

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* In all cases, seeds that have been moistened should be sown on moist ground; for if small moistened seeds, especially, be sowed on a very dry soil, under a hot sun, the chances are that they will be dried up and destroyed. This applies to spring, or early culture in summer, when a fortnight gained may be important.

682 lbs. imperial, being 61,380 lbs., or 27 tons 8 cwt. per acre; a quantity nearly sufficient for ten cows during the six winter months, according to the calculation of the Flemings; and more than enough for twelve Jersey cows, in my estimation, together with straw, hay, and a few mangold wurzel, or turnips; it being well known to all but novices that cattle will not thrive on one kind of food.

In October the leaves, as they begin to decay, should be cut off and given, when dry, to the cows; it is important to see that they be dry, as when moist from rain or dew they are apt to inflame the udder. The leaves come in as a convenient auxiliary to grass at this period, and if given *moderately*, a good armful per day to each cow will impart nearly as much richness to the milk as the parsnip itself. This most excellent root will fatten oxen or pigs (or poultry if boiled) in an extraordinary manner, and is certainly one of the best preparatory crops for wheat. It will keep in a dry store until April, and previously to storing should be stripped of its leaves, if any remain attached to it.

It is to be observed, that after the second hoeing the ample spreading leaf of the parsnip covers the soil, and generally smothers all after-weeds, deriving also, perhaps, much nourishment from the atmosphere, whereas, the less spreading thin leaf of the carrot may not do so in an equal measure, and certainly in my experience allows more space and air for the growth of autumnal weeds. A careful experiment is now in progress in order to ascertain the merits of the new white carrot, as compared with the parsnip, both being cultivated in the same manner.

In 1834, two and a half drills of the Alteringham or cattle carrot produced 261 lbs., and an equal portion of land in parsnips afforded 840 lbs. There were many autumnal weeds among the carrots, and none in the parsnips, though treated alike.

Sir Humphrey Davy states, that 1000 parts of carrots furnished 95 parts of sugar, 3 parts of mucilage, and half part of extract:

1000 parts of parsnips afforded 90 parts of saccharine matter, and 9 parts of mucilage. Hence may not the excess of mucilage in the parsnip be one cause of its superior fattening, as well as butyraceous quality?

J. LE COUTEUR.

Belle-Vue, Jersey.

C. E. GOODRICH'S CULTURE OF THE POTATOE.

REPORT OF COMMITTEE.

Utica, August 28th, 1851.

The undersigned, being most of us farmers, and extensively engaged and interested in the culture of the potato, and having also many of us read the essays of Mr. Goodrich on the "potato disease," were anxious ourselves to examine his prosecution of the remedies suggested in those essays.

Those remedies we understood to be the repeated re-production of the potato from the seed balls of our home sorts, the importation of foreign sorts from the native land of the potato, and (in case of their want of adaptation to our climate,) the procuring of new sorts from their seed balls. Having understood that he was experimenting in all these modes, and some of us, moreover, having singly witnessed their progress both during the present and the last year, we were induced, to-day, to visit his market garden where these experiments are in progress. We thought it important to see his crop while now in the foliage, as well as hereafter when they are dug; so that from their whole aspect we might be able to judge of the truth of his principles and the success of his methods of restoration to vigor.

We premise that the uplands where the most of these experimental potatoes are cultivated vary from a gravelly to a sandy loam. The low lands are a reclaimed swamp muck based on clay or clay gravel. They were both in a condition of moderate fertility and good tilth. He had used no manure in the preparation of the soil other than a moderate application of leached ashes; nor had any thing been applied during their growth, other than the ordinary one of ashes and plaster.

Passing by his culture of potatoes, as an ordinary field crop, we found his *experimental* varieties covering about one acre of ground, and to amount, according to his estimate, to about 240 varieties. The foliage of our ordinary field crops is now quite dead, and diseased tubers have been found for a month past. The weather also for some days past has been very unfavorable, and for the past two nights has threatened frost.

We were shown many single varieties and classes of potatoes, as

1. *Bogotas.*—These were said to have been imported from Bogota in the spring of 1848. We saw them both on dry and damp soil. In both they were very green and exhibited numerous flowers. On the dry ground they also bore many seed balls in every stage of growth. This variety are said to be liable to a small black flea which perforates the foliage, and dwarfs the growth. Indeed the evidence of it was apparent upon the most careless inspection. We saw the tubers small and black, and were told that they are perfectly hardy, but watery and uneatable. They are said not to have improved by four years of cultivation. As the illustration of the perfect health of a tuber imported from the native region of that plant, we thought them an interesting exhibition.

2. *Bogota Seedlings.*—These were derived from seed balls produced by the foregoing in 1848, sown in 1849, and replanted in 1850 and 1851. We found them growing in both dry and moist soil, and with equal verdure. They consist of very numerous varieties of *black, red and white* sorts so planted that the eye at once detects each separate sort. The variety in the size and color of the foliage was far greater than any thing we have ever seen among our home sorts, while the aspect of the family, as a whole, was also very unlike any thing we commonly see. These, like parent, No. 1, above, were covered with seed balls, and more or less with flowers and exhibit also the same liability to the black

flea which perforates the leaves. They, however, on examination were found to have larger tubers than the parent, and though still green, to show, especially some of the varieties, signs of earlier maturity.

Mr. Goodrich is in doubt whether they will ever tuber early enough for a field crop, and considers them valuable mainly as an illustration of the hardiness of seedlings from a foreign variety, and also and especially, as the source of seed balls which will undoubtedly by one more reproduction produce many sorts entirely fitted to our climate.

3. *Chilis of* 1850.—These were understood to have been imported in 1850. They have the aspect nearly of our common sorts, with round red tubers, and were very green and thrifty. They grew on his moist swamp soil, but exhibited no flowers, as we understood they have never done. They seemed every way exceedingly promising. Their value for the table we were told had not been fully tested. From the high state of verdure and the free growth of this sort, we should anticipate valuable results, while we cannot but consider them a strong proof of the superiority of tubers imported from countries where the potato is indigenous.

4. *Chilis of* 1851.—These are said to have heen imported during the April of the present year. From the injured state of the seed they had been capable of division only into light colored and red varieties. Each we found planted partly and mostly on dry ground, and partly on swamp muck. Each of these two general varieties were found very green on the moist soil, but less so on the dry. Indeed, on the latter the red sorts, except a hill or two, were found fast withering, while the light colored sorts seemed to have been much injured in the foliage but to be recovering. The growth of those light colored varieties was so peculiar as to be quite unlike any thing of the potato family we have ever seen. This peculiarity was seen in the numerous thread like vines and grey green color of the foliage; but what struck us most strongly was the amount of seed balls, eighteen and twenty bunches of which (and we were

told even thirty bunches in some cases,) were found on a single hill. We think this fact entirely without a parallel in potato culture in our country. Most of the plants were still in flower, and the balls were in every stage of progressive growth. A portion of the red varieties were undoubtedly the same as No. 3, above. Others, especially those that were found still green, were obviously to the eye different. The tubers of the red sorts were found of good size, but those of the light colored sorts were small.

The susceptibility of this family of fine healthful growth in a muck, moist, and (as the season had been,) almost a wet soil was so very noticeable that it suggests to us a possibly important quality in this family of varieties. Considering the greatly injured and enfeebled state of this seed after a long voyage across the tropics, we were not surprised to see it grow with less healthfulness than some other sorts under the unusual pressure of the season. The fact, however, that whereas, all our old sorts when once injured by the weather, had died incurably, the most of these had recovered and were covered with fruits and flowers, argues a degree of inherent vitality which may make them valuable in future years. The value of this family as a source of seed balls can not be small, certainly not, should the culture of fresh seed another year be an improvement on the high degree of vigor of even injured seed this year.

5. *Home seedlings of* 1849.—These were produced from seed balls gathered from the old red sort in 1848, sown in 1849, and replanted in 1850 and 1851. They are thus coeval in culture with No. 2 above.

This class are said originally to have embraced some 140 to 160 varieties, and to have been successively reduced each autumn by the rejection of bad sorts until but sixty-five remained, and were planted last spring. We found them planted in classes as follows:

1. Kidneys said to be....................................	4 sorts.
2. Whites not kidneys,..................................	17 "

3. Sorts intermediate between white and red,	8 sorts.
4. Flesh colored,	13 "
5. Red,	21 "
6. Black,	2 "
	65

These were so planted that the eye readily distinguished the position of each family, while the size, color and shape of the foliage and the vines as readily distinguished many of the individuals of each family, and threw them into striking contrast with each other. Upon some of these varieties we saw seed balls occasionally in large numbers, and were told that about six varieties had produced them. They were growing in the same general plat with Nos. 2 and 4 above.

Of these sixty-five sorts it was evident that about twenty were greener and stronger than those now generally cultivated, and of these twenty, ten were quite green. We dug a hill each, of some of the most promising of these sorts, and found them large in tuber and yield, and uniformly sound; indeed, some of them were varieties of high interest. Considering that this family of home seedlings is the first reproduction from an old and failing variety, and that a few of these varieties are equal in size and yield, and apparently in hardiness, (and we are told also in flavor,) to any thing we have ever seen on similar soil; we can not but view them as a striking and indisputable proof of the possibility of restoring the lost energy of this valuable plant by reproduction from the seed ball. Mr. Goodrich pointed out one single variety of flesh colored tubers in this family, which are equal to anything we have ever seen, though we were told that they were not quite equal in *hardiness* to some others of the same family which were not quite their equals in other respects.

6. *Home Seedlings of* 1851.—Theoretically, Mr. Goodrich does not consider the seedlings of 1849, (No. 5 above,) as perfect, since

they are but the first step in the process of regeneration by reproduction. Having been able to ripen two seed balls on the seedlings of 1849, one of them upon his choicest variety, and the other upon a sort of inferior health; they were planted in his usual manner, and produced severally seventeen and eight plants, which were set, the former in eight, and the latter in four hills. It is upon *this* experiment that we think a higher interest concentrates than any other upon which Mr. Goodrich is engaged.

Here are twelve hills in the second stage of reproduction, all of them green and large in foliage, but the eight hills greener and larger than the four, in exact correspondence with the health of their parentage. To see the twelve, and especially the eight hills of seedlings whose seed was sown exactly five months before, with vines, the most of them of the largest size, and covered with flowers, and exhibiting the verdure of June, while some of the tubers were actually bursting from the soil, and of eatable size, was indeed, a rare sight. We think that no higher proof is needful or possible of the susceptibility of the potatoe, of restoration to its original vigor by careful reproductions than is here presented.

In conclusion, we can not but consider these experiments not only as being in the highest degree hopeful, but as perfectly settling the question,—can the potato be restored by the wise importation of sorts from lands where it is indigenous, and also by the seedlings derived from such sorts. We consider the evidence equally perfect that it can be restored by a process of repeated and wise reproduction from the best old existing varieties

THOMAS GOODSELL, *Utica*,
WILLIAM BRISTOL, *Utica*,
JOHN G. WEBB, *Utica*,
JOHN CUNNINGHAM, *Whitestown*,
WM. R. MILLER, *Marcy*,
H. H. DYER, *Marcy*,
THOMAS LANE, *Marcy*.

I also further state that I saw the potatoe balls, alluded to in No. 4 above, after they were gathered, and that they measured about two bushels and eleven quarts; I also measured the ground on which they grew, and found it to be about one seventh of an acre, I also saw his best home varieties, No. 5 above, after they were dug, and can testify to their fine appearance and large size.

JOHN CUNNINGHAM.

Notes on the preceding.

As the above report left the crop in the ground, it seemed desirable to bring the history of it down to the conclusion of the season. A part of the varieties noticed in this report, are also noticed in the article at the close of the Transactions of 1850. At the time the preceding report was drawn up, neither the committee, (whose report it is,) nor Mr. Goodrich, knew that the article in the Transactions would appear; as the report of the committee seems to be an impartial statement, corroborative of the article in the Transactions of 1850, and as it embodies many new facts, and suggestions, and the history of many new varieties, it is deemed advisable to publish it.

No. 1. *Bogotas.*—These met the frost Sept. 27th, in a high state of verdure. Tubers small and sound, not much improved in size beyond former years; *no seed balls on moist soil.*

No. 2. *Bogota Seedlings.*—Sixty-three varieties; twenty-two black, thirty-three red, and eight white. Most of them green when frost came; a few badly dwarfed by the insect, noticed in the report of last year. Two varieties showed slight disease in the tubers, an *indication, however, scarcely to be noticed,* when it is *considered that it occurred in a family of tall growing varieties, whose tubers set amid the damp autumn, when all depositions of tropical plants, and often those of hardy ones are unhealthful.* These tubers are much improved, compared with those of last year, and with No. 1 above, but are yet too yellow in flesh and watery, for the table. *No seed balls on moist soil.*

No. 3. *Chilis of* 1850.—Yield very large and sound, but although presenting a flesh of snowy whiteness, they are too watery for fine table use. Should future cultivation improve them in this respect, as analogy, in the case of other varieties, would lead us to hope, they must become very valuable. No flowers, not even the germ of them in this variety.

No. 4. *Chilis of* 1851.—1*st. The light skinned class*—These exhibited on digging, four varieties: all small and not very dry in flesh, of course not very eatable, but much superior to No. 1, above. *They bore seed balls equally well on dry and moist soil.* A few tubers were diseased, a result not all to be charged to intrinsic weakness, but to the period of lateness at which they set, as in No. 2, above.

2*nd. The Red class.*—There were three varieties: one, including nearly all of them, was probably identical with the Chili of 1850; see No. 3, above. Another, consisting of a very few, was not important. A third, not known to exist until dug, consisted of about six hills, and was exceedingly valuable. The tubers of this variety is a dark and dirty red, and very unshapely. The yield was equal to any thing I ever saw under equal circumstances, as one hill weighed eight pounds, (equal to the eighth of a bushel,) and one six. This variety was green until frost. It has a beautiful dry and white flesh, and as a table potato has no superior in the circle of my knowledge. *It bore seed balls moderately and equally on dry and moist soils.* Should another year justify the promise of the present, the introduction of this variety into our country will constitute an era in potato culture.

No. 5. *Home Seedlings of* 1849.—There is here little to be added to the full report of the committee. The leading sorts were all green until frost came, and were sound and very productive.

No. 6. *Home Seedlings of* 1851.—These twelve hills produced twenty-eight pounds of tubers, i. e., at the rate of two hundred and twenty-two bushels to the acre. There were nineteen varieties nearly all of which are fine in shape, and of white flesh. One variety was slightly diseased. The most of them were green until frost came.

C. E. GOODRICH.

VALUE OF THE POTATO IN NEW-YORK.

The estimated product of potatoes, in the United States of America for 1847, according to the Report of the Commissioner of Patents, (p. 558,) was 100,950,000 bushels, which at 20 cents per bushel was valued at $20,190,000, being, after wheat, Indian corn, oats, beans and peas, the sixth in value. In the State of New-York, the potato crop is second only to that of Indian corn in value. Estimating the potato crop of the State of New-York, at one-tenth that of the whole Union, for it must be remembered that very few, comparatively, are cultivated in the Southern States; we have 10,095,000 bushels, in this state, of the value of $2,019,000. Now estimating the loss for the year 1850 at one-third the crop, either by actual decay, or diminished yield, we have a loss of $673,000.

No. 2. THE POTATO DISEASE IN 1851.

In the Transactions for 1847, pg. 425—460, and for 1848, pg. 403—426, are two essays on this subject. In the same work for 1850, pg. 719—729, is an essay on the regeneration of the potato. These three essays were intended to illustrate the following propositions.

1. *The immediate cause of the potato disease, is sudden alternations of weather, occurring at critical periods in the growth of the plant.*

2. *The remote cause is the exhausted energy of nearly the whole species cultivated in Europe and the United States.*

Since the first conception of these sentiments in 1846, to the present hour, they have been almost constantly before my mind, while engaged in the cultivation of a market garden of from fifteen to twenty acres, embracing from three to six acres of potatoes annually.

Other theories of disease have been before my mind, but continued and varied observation constrains me to adhere to the doctrines of these two original propositions, as well as to most of the illustrations by which they were originally enforced. I have noticed numerous facts and sentiments, leading in the direction of these propositions, and published as new, during the last two or three years, all of which are noticed and discussed in the first two essays above noticed. It is not my wish to go over the ground of those essays, but merely to state new facts and illustrations bearing on the same great points, and usually corroborative of them.

There is the more necessity for doing this since the disease has assumed a form somewhat new in my experience, though I suppose not new in other parts of the country, where the climate has been somewhat different. This new phase of disease is its obvious connection with *hot and wet weather*, instead of that which was *cold, wet, and windy, alternating with that which was hot and dry*. This phase of disease was alluded to theoretically in the Transactions for 1847, p. 444 and 445, and in those of 1848, p. 423 and 424. But it could not there be practically described, as it is in this paper, since at that time it had not been practically experienced.

I. *The Natural History of the Potatoe.*—This subject is treated at some length, in the Transactions for 1847, as before referred to. I here add some farther facts:

A friend of the writer, spent some time at Bogota, a city of New-Grenada, situate upon the mountains, 8,500 feet above the sea, five degrees of north latitude. During his residence there, in 1847 and 1848, he found the climate free from frost through the whole year, the thermometer never rises above 84°, nor sinks to the freezing point; nor does it ever vary more than 5° in any one day. There he found, as Humboldt had more than forty years before, potatoes of the very best quality. The climate was found too cool for melons, and many other tropical plants, which were brought on mules from warmer regions, lower down the side of the mountains. Here too, many species of plants, as some varieties of peppers and cabbage, never cease growing. It is hence, obvious that *the potato loves a cool uniform and long season*, the very reverse of what it finds here, where we frequently have *a hot unsteady and short season.* Nothing but the greatest constitutional vigor could ever here have sustained the potato in a prosperous growth, in the same soil and climate that produces melons, tomatoes, corn, egg plants, &c. We see, from the foregoing facts, the reason why the potato flourishes in Iceland, and even in Siberia. Wherever it has shortened the season of its growth, and finds a few weeks of summer weather, free from frost, there it will mature a crop. We see too, why, in this climate, the potato does best in elevated and even mountainous districts, where it finds a cool position, and moist mucky soil.

II. *The two fold sympathy of the potato.*—1st. As a simply tropical plant, it requires like the most of its class, *steady and uniform weather, but less heat than most of its associates.* It fears not only frost, but all sudden and extreme changes. From such changes I think most of the disease, occurring in my experience, before 1850 arose. 2. As a mountain tropical plant, it will not only bear, but *requires, for its best development, more air, moisture and coolness, than most other tropical plants.* The Nasturtium, however, is found growing on the mountains of South America, in company with the potato, beyond the limits of all other cultivation. Exactly in harmony with these facts, the nasturtium will grow, both in England and the United States, in cooler positions than any other tropical plant, except the potato. The potato, in these respects, sympathises with our common hardy plants. The damp and hot weather that injures grapes, plums and gooseberries by mildew, that rusts wheat, and that rots cabbage and turnips, will, at the same time, mildew the potato.

III. *The weather of* 1851.—As the potato disease is ruled by the weather, so it seems in order first to speak of it. The season, as a whole, was wet from frequent and often heavy rains, and a state of things very different from that which existed in other and more remote parts of the country. It was also unusually steady, without those sudden changes and cold chills that characterise our climate in most years. *May*, and the first half of *June* were, as a whole, dark, damp and cool, and so unfavorable to tropical plants in general, but not so to the potato. The last half of *June* and all of *July* were hot, damp and often excessively wet, the showers being intermitted with burning hot sunshine. *August* was cool with few warm days, too cool indeed, for the prosperity of common tropical plants, but favorable to the potato. *September* was warm to the middle of the month, the only thing which saved the corn crop, which had suffered from the wetness of June and July, and the coolness of August.

IV. *Disease of the potato, a general view.*—According to Loudon it is now one hundred, and according to some other writers, it is one hundred and fifty years since the potato began to be cultivated as a common field crop. In the absence of exact historical dates we have no very certain or definite account of potato disease until within the last few years. It has been referred to various causes: 1st, *Insects, worms, &c.*, but unfortunately it happens, that though the potato, like other plants, has its natural enemies, from some of which it has at times suffered considerably, no one class of insects has yet been discovered whose ravages have been of a nature and extent sufficient to produce the disease in the form in which it has appeared. But admit the extent of injury claimed for insects, yet *the existing disease is not occasioned by their ravages, because clearly it is occasioned by another cause, adequate to its production, just in this form:* And where different varieties have been planted side by side, a portion of the varieties have been diseased and another portion not. This result has followed regularly, year by year; a fact quite inconsistent with the idea that it is occasioned by an insect.

2nd. *Deficient soil.*—But the disease often invades new soils of the most faultless character; nay, in this case as in the preceding, one variety has exhibited disease and one not, during the same year, and in the same circumstances of culture.

3*d*. *Fungus, Mold or Mildew.*—This theory is doubtless partly true, but not true in the sense in which I have usually understood it to be explained. The mildew, so far from being the *originating* cause of the disease, is as I suppose, but the *result and proof of pre-existing causes,* arising from the action of the weather on the constitutional weakness of the plant.

4th. Exhausted energy and consequent exposure is suggested as the true explanation of the disease in every case. This theory exhibits two aspects:

A. *First aspect of Disease.*—In this case cold, wet and windy weather, following that which was hot, dry and stimulating, seems to paralyze and deprave the circulation of the plant. Thus chemical changes overcome vital energies; besides this, the action of the wind lacerates the foliage in many cases. On the return of warm weather, especially if it be sudden, the action of both sun and wind, dries-up the injured foliage before the exhausted circulation can be restored from the root, which, partaking of the general torpor of the plant and secluded from the action of the atmosphere by the wetness of the soil, had nearly lost its action. The injury of such a chill is seen to be partly mechanical and partly chemical, and to be closely analogous to that which takes place with all vegetation under the permanent dark and damp chills of autumn. It is also not unlike the injury of hot bed plants removed too early and without due preparation. The proofs of such a morbid condition of the potato, thus theoretically stated, will now be exhibited.

1. *A pallid appearance of the leaves, and often a slightly erupted state of their edges.*—There is a loss of that intense verdure that characterizes the potato in a state of high and healthful growth. The hue becomes yellowish, and sometimes reddish green. It is such a change however as does not strike a careless observer. *This change of color is undoubtedly in all cases the first and leading indication of disease and one that becomes a key to all the rest.* It is seen in many cases before the chill passes off and always within two or three days after. No one can doubt that this appearance

indicates a bad state both of circulation and elaboration, on both of which economies the health not only, but the life also of a plant depends.

b. *Wilted leaves and falling flowers.*—Speedily after the change of color just noticed the top or youngest leaf of the plant withers. It is usually but a *part* of the rosette of leaves that crowns the plant that thus wilts. The flowers also, whether open or not fall off without forming any balls. The stems of the flowers break off at the natural joint a half inch below, through mere starvation.

c. A blue color on the point and edges of the upper and outer leaves particularly, and a yellow iron rust look on the lower and inner leaves. Can any one doubt that these marks indicate the formation of an acid in the leaf of the potato in cool weather in June and July, any more than that whole forests of trees should exhibit the same appearances under the permanently damp, cool and dark weather of September.

These indications follow closely upon the falling flowers and wilted leaf, and progress more or less rapidly, according to the severity of the chill. Sometimes, on any given day, you will find scarcely a discolored leaf, and then in three or four days a whole field will be discolored by them. These indications end in the speedy death of the whole leaf, the whole of the three indications, (*a*, *b*, *c*,) acting almost with the speed of frost. At other times these indications are scattering, and act slowly. In such a case they soon disappear, and the crop recovers and grows on. In a few cases the vines also speedily die after the fall of the leaves. But more commonly they do not, but struggle awhile to live without leaves, and eventually die of starvation.

d. *Decay of Tubers.*—If the preceding signs of disease are very violent, the tubers are rarely injured, whether they are one quarter or even three-quarters grown. But if its progress is slower, and the foliage dies a lingering death, the tubers are sure to be affected by rot.

Just as often as severe chills in the middle of summer occur, so often will many or most of the old varieties exhibit these signs of disease, provided they recovered from the first attack. In reference to the foregoing signs of disease, I now ask, is the disease of the tubers a mystery? And is there any mystery in the exhibition of such signs of disease, coming, as always and only they do, in connection with a chill.

B. *Second aspect of disease.*—This seems to arise from hot and wet weather, intermitted, in many cases, with calm, bright, and scalding sunshine. This engorges the plant beyond its powers of healthful elaboration. The constantly wet state of the soil hinders the action of the atmosphere upon it, and so enhances the previous difficulty. The cuticle of the whole plant, the leaf especially, formed amid such circumstances—circumstances akin to the condition of a hot bed plant, with too much heat and water, and too little air,—the cuticle, I say, thus formed, is necessarily tender. Then the hot sun, acting on the plant with its juices thus diseased, and its cuticle thus tender, greatly injures it. The visible morbid indications, arising out of these circumstances, are the following:

a. *A spotted and livid appearance of the leaves*, sometimes interspersed with the pale aspect, (noticed in A, a, above,) and giving the leaves of the plant an appearance of irregular patch work.

b. *The withered leaf and falling flower*, also appear, but much less than in the first aspect. The flowers, especially, fall much less speedily than in that case, and only after being fully and for a considerable time expanded. Strong varieties indeed, in this state of weather, set seed balls freely.

c. *Steel-blue tips on the upper leaves, and iron rust stains on the inner and lower ones appear as before, but less frequently.*

d. *Mold or mildew.* This is the one mark of disease, in this second aspect of it, that rivets the attention. It breaks out every where upon the plant: (a.) *Upon the leaves*, beginning in the dark livid spots, and spreading like a contagious cuticular affection upon an animal, until it destroys the whole leaf. This mark is obviously a parasitic fungus which feeds on the depraved juices of the plant: (b) *On the stems*, especially two or three inches from the upper extremities of the plant. In this case it destroys the whole cuticle, but in moderate cases does not destroy the stem whose internal circulation yet continues. The stem above this point is as green as before, and frequently is broken partly off by the wind, hangs down and continues to grow. (c) *The flower stems* also become affected with mildew, frequently, but not always dying. Often the balls, formed and forming, continue to grow. (d) *The balls*, whether small or full grown are seized, if small, with mildew, if full grown, with a brown appearance which pervades the whole structure, just as in the case of melons, tomatoes and egg plants noticed in my former essays on this subject, (see Transactions for 1847, p. 442, 443. Those full grown balls do not usually rot, but continue firm and unnaturally hard. On one of my South American varieties I had nearly one bushel of balls in this condition, amounting to about one fourth of the crop of balls. The balls that set late, on all sorts after the season of mildew passed away, set and matured without an attack of this sort.

e. *The tubers*, so far as my experience goes in 1850 and 1851, are less likely to be diseased than under the first aspect of disease. Disease also comes upon them, I think, while as yet the mildew has made very little developement.

Here, as in the first aspect of disease, the strongest varieties suffer least, some of my home seedlings, and most of my foreign sorts scarcely at all. Here also, if the first attack is light, the plant recovers and continues to grow, but may, in fitting weather, suffer a second attack. Unfavorable weather may be of that mixed character, that the two aspects of disease shall be mingled more or less. Indeed they obviously are not very different, each having many of the same indications, and each being the result of severities of weather.

Observations on both aspects of disease.—1. The first aspect of disease alone prevailed previously to 1850; the second has been noticed mainly and almost exclusively in 1850 and 1851. I make this remark with much diffidence. The field is wide and mainly untrodden, and may need renewed observation in coming years.

The preceding description of disease has cost me much time and observation, and is made with the consciousness that I have reported the indications of nature as wisely and truly as I was able.

2. The months of June and July, particularly from the 25th of June to the 20th of July, is the season when the potato is most likely to be diseased. That is the season when the changes of weather are most sudden, and when the potato exhibits the largest quantity of foliage, and in the most tender and susceptible condition. Those who judge of potato disease mostly from the indications on the tuber, will not ordinarily find it until a much later period.

3. These two aspects of disease are seen to be in exact sympathy with the two-fold sympathy of the potato. (See above in No. II.) The first aspect of disease is suffered, in common with most other tropicals cultivated in this climate. This point is fully illustrated in the Transactions for 1847, p. 442—444, and for 1848, p. 411—414. So the second aspect of disease is suffered in common with many hardy plants and fruits, such as plums, gooseberries, walnuts, apples, &c., and some vegetables, as carrots, turnips, and cabbage.

V. *Actual occurrence of disease in* 1851.—June 28th. Potatoes have now been up about one month. Noticed to-day withered leaves and falling flowers, on some sorts got from Buffalo, and others from near New-York city, and also in the old early pink eye.

June 30*th*.—Saw a few steel blue tips on the leaves of some of the weaker sorts. The weather for two weeks has been damp and hot. Plums are rotting badly. Gooseberries and peaches are scalding on the sun side.

July 3*d*.—Most ordinary varieties are now dropping their flowers, whether open or not. Potato disease reported at Portsmouth.

July 7*th*.—Weather still damp and hot. Some foreign sorts, received this year, are setting new balls very freely.

July 23*d*.—Color of foliage has long been bad. It now exhibits a pale sickly green, intermingled with dark livid spots. Blue tips are now abundant on feeble sorts.

Saw the first mildew to-day. It occurred on varieties from the western part of the State, in a position where they were planted rather closely and grew luxuriantly. Saw many mildewed leaves in the field of a neighbor. This exhibition of mildew is four weeks later than last year, exactly in harmony with the relative commencement of hot and wet weather, which began in 1850, July 14th, in 1851, June 14th. Diseased potatoes first seen in the Utica market to-day.

July 23d to 30th.—Balls setting quite freely on some foreign sorts, on the seedlings derived from them, and on some of my home seedlings.

July 25th.—Hot, wet weather. Potatoes closely planted and falling down badly, present many yellow leaves, dying and dead in the center of the plant.

July 26th.—Found one diseased tuber. Potato disease reported in Ireland.

July 28th.—Hot and wet weather with severe scorching sunshine. The aspect of the foliage very bad. Mildew first seen on the 23d is now everywhere apparent on all the old varieties, and usually in proportion as they are close planted and have grown luxuriantly. These indications are scarcely seen in my best foreign sorts and home seedlings.

July 29th.—Noticed that, in extreme cases, the mildew extends to every part of the plant, stems, leaves, flowers and balls. Considering the engorged state of the plant after three weeks of continuous hot, wet weather, intermingled with hot burning sunshine, one cannot but fear the worst consequences to the potato crop. The progress of the mildew is very rapid.

July 31st.—Three days of cooler weather, without rain, produces a little check to the progress of mildew. The diseased leaves are sloughing off, while its progress is often arrested on a single leaf, the diseased part falling off, and the remainder continuing green. The dryer and cooler state of the atmosphere seems to have strengthened the cuticle, and allowed the engorged juices to dissipate, thus removing the cause of mildew.

August being mostly a cool, dry month, was favorable to the health of the potato, especially as a means of checking the progress of mildew.

August 13*th*—The foliage of my ordinary field crops is nearly all brown. The cool weather of the last two weeks has undoubtedly saved the potato crop in central New-York. Indeed, I think that one week's continuance of such weather as had, for some time, been in existence previously to July 27th, would have destroyed all common varieties of potatoes, root and branch.

August 15*th to* 19*th*, seedballs are setting very freely. Many sorts, as the yam potato, and some, both of my home and foreign seedlings, that had refused to set during the continuance of the mildew, are now setting freely. As most of these varieties had manifested great permanence of flowers, the failure to set fruit, undoubtedly arose from want of sufficient dryness in the air, for the delicate operation of fructification. That this failure to set seed balls did not arise from weakness, is evident from another most remarkable fact. The flower stems, even the small ones that had shed single flowers, subsequently turned to leaf-stems, and grew in some instances from six to ten inches in length; and where this was not the case, they became covered with leaves; these leaves and stems were doubtless the result of those juices originally elaborated for the support of the seedballs, which failed of setting. In the case of old and feeble varieties, the flowers usually fell while yet in the bud, and the very stems on which they grew, often withered from weakness, or were dwarfed.

VI. *Results of the Season.*—1. My foreign sorts generally, except some imported this year, in a shrivelled and feeble state, have substantialy resisted the mildew, and even in this excepted case, they recovered, set more fruit, and were eventually killed by the frost. My seedlings, also, both home and foreign, were generally but little injured.

2. I have seen no single hill of potatoes this year, entirely exempt from mildew; although I had many on which a careless and ignorant observer would have noticed no signs of disease.

3. The seed balls of this year have, in many cases, been very large, in one case, the larger balls weighing one-half ounce each.

4. *Fruit generally has been injured. Plums*, on my sandy soil, have been a failing crop, though setting abundantly, and also protected from the curculio. They rotted when two-thirds grown, partly after and partly before the untimely fall of the leaf. The Elfrey, Damson, Prince's Imperial Gage, and the Yellow Gage, all did tolerably well, and in the order here indicated, but most other sorts failed almost entirely. My neighbors, who had plums on heavy clay soil, were much more successful. *Grapes* failed exactly as plums did.* *Gooseberries and Peaches* were both injured by a sun scald on the sun side of the fruit. *Apples*—Many varieties were spotted and dwarfed, worse than I ever knew the same sorts to be before. Others were not sound, and showed a disposition to rot, as I have never known the same sorts to do before. *Walnuts, both shag-bark and black*, were very poor, the meat being either shrivelled or bad in flavor.

5. Tropical plants were injured the first half of June by the coolness of the weather. During the long season of mildew they suffered, not however I think from that cause, but from profuse rain. The ripening fruit was injured in August by the general coolness of the weather.

6. From all the foregoing considerations combined, I conclude that the weather of 1851 was peculiarly unfavorable to the health of the potato, and would have been so had it occurred fifty years ago. The timely cool dry weather of August saved the crop from much rot, but as the vines were already dying, the crop has been light from the smallness of the tuber. The foliage of the crop in Oneida county was generally all dead by the middle of August.

7. In parts of our country where the season was dry and hot, or dry and cool, the preceding suffering of the potato crop was not of course felt, and will scarcely be appreciated.

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* No one who watched the progress and appearance of mildew on the wood and leaf of the grape can doubt that its cause was one with the potato disease. The unnatural hardness and the brown tinge of the berry of the grape, without and within corresponded exactly moreover with the similar appearance of the potato ball this year, and with that of diseased melons and tomatoes in former years.

APPENDIX TO ARTICLE ON POTATO DISEASE IN 1852.

MISCELLANEOUS FACTS AND OBSERVATIONS.

1. *Culture of Potatoes in the Southern states.*—"In Mississippi and parts adjacent, the best common potatoes that we have ever seen were planted in November and December. Plow the ground deep, not less than ten inches—twenty would be better—open a deep furrow, and fill it with good stable manure, well trampled down; cover it slightly with earth and lay the tubers on ten or twelve inches apart; then cover with a heavy furrow turned up from each side and smoothed down with a hoe. Average the furrows so that the water will not stand, and you will have a good crop." *American Agriculturist*, *Dec.* 1847.

The noticeable points here are the *earliness and depth of planting.* These points have both been urged in the preceding essays. They give deep and wide spread space to the root, and thus secure the plant from drought, heat and sudden changes, while the crop is matured before the highest heats and drought of summer. The usage of the South is based on the implication that *the potato requires cool and moist culture.*

2. *Culture of the Potato in cold and wet weather in France.*—In the north-east part of France lies the district called Ban-de-la-Roche. It was the residence of the celebrated Oberlin. In the life of that excellent man (Philadelphia edition, 1830, page 84,) we have the following record:

"By his extraordinary efforts and unabated exertions he averted from his parishioners in 1812, 1816 and 1817, the horrors of approaching famine. The new crop of potatoes that Oberlin had lately introduced, formed the principal subsistence of the people during those disastrous years *when the season was so rainy and cold that they could not get in two thirds of the grain at all.*"

The single point which I wish to notice here, is the fact that in a *cold and wet season*, when grain could not be obtained for food, the potato was productive and became the chief reliance of the people. The climate of the north-east of France is much cooler than that of New-York and New England, and much less exposed to severe and sudden changes. Here is proof that the moist and cool soils, such as are usually found in mountainous districts, are congenial to the potato. The last two years, noticed above, will be well remembered as having been years of scarcity and suffering in our own country. During one of them, (1816, I think,) we suffered at least a slight frost in every month of the year. The potatoes were excellent, and the grass, though short, made very rich hay. Rye was sold at $2.00 per bushel, and other grain correspondingly high that year.

3. *The potato not an acclimated plant.*—The impression is wide spread that tender tropical plants can be gradually carried northward, and hardened to the climate until they will bear frost, and flourish there much as in their native clime. The whole impression is erroneous. Tropical plants may shorten the period of their maturity, and a few probably may be budded or grafted on hardy northern varieties that are nearly related, and thus a little strengthened. But this is the utmost that can be done. The fact that our summers are, while they last, nearly as hot as tropical ones, is the only reason why we can cultivate such plants as corn, cucumbers, melons, pumpkins, squashes, tomatoes, &c. But no one of these bears frost now, or matures good fruit in a short, cool, or wet season, any better than the first year they were introduced. Nay, some species of southern plants, when first introduced, possess a vigor which they afterwards lose.

My Bogota potatoes, imported in 1848, bear the high dry heats, the wet chills, the lacerating winds, the sudden changes of this climate, better than any of our old varieties. But they require a long season to mature their tubers, and four years of cultivation have done nothing, or at least little to shorten it. Nothing, I think, but reproduction from the seed ball will shorten them, or any plant similarly situated. One reproduction has already shortened the period of maturity in this variety, but not sufficiently. A second reproduction will, I hope, shorten them to the requirements of our climate. As the potato is a mountainous plant, cultivated over a wide extent of latitude, so it is possible among numerous importations, to find some whose period of maturity will be found exactly fitted to our own climate. So it has been in my experience.

4. *The curled leaf.*—This seems to be a constitutional defect that belongs mainly, if not exclusively in my experience, to the red varieties. The old red, one of our strongest and best old sorts, has it. My large family of home seedlings, derived from it, show it in some of the varieties, even where that variety is much stronger than the parent. So, also, two varieties of reds, sent me from abroad, exhibit it, although the seed was plump and fresh. I have not examined it farther than to notice that it comes on early in the season, and hopelessly dwarfs it, but does not disease the tubers.

5. *The relation between bearing seed balls and the health and vigor of varieties.*—The following thoughts are suggested with great diffidence, though strongly confirmed by the experience of past years. The general impression is that *seed ball bearing is a test of hardiness among varieties of potatoes.* I think the doctrine, in general is true, but it has many exceptions and qualifications. The capacity of a plant or tree to bear fruit seems often to depend not entirely on the general vigor of the plant or tree, but also upon the particular character of the flower, or of the season. The tree may possess most unquestionable vigor, while the flower may habitually be deficient, either in some indispensable organ, or in the vigor of that organ. Those acquainted with the controversy about pistilate and staminate strawberries will understand me. A wet, cold and windy season, at the time plants are in flower, frequently prevents their fructification. Some varieties of pears and plums, as well as of melons and cucumbers, frequently thus suffer. When once a plant or tree has established a character for regular fruit bearing, and subsequently, and almost habitually, fails to do so, there is undoubted evidence of depreciated energy. The following facts on this subject are clearly ascertained in my experience, in regard to the potato:

(1.) All our old varieties, in these days of disease, drop their flowers without setting fruit. The exceptions are so few as not to be worth naming. The flowers frequently fall when in mere bud, and long before they expand.

(2.) We formerly had a very good potato which bore no flower, and was called the "no-blow."

(3.) The Yam potato has exhibited, in the cultivation of 1851, a good degree of vigor, much more than any of the old sorts. Its numerous large white flowers exhibited a marked permanence, but not one of them set for fruit during the prevalence of mildew in the month of July. In August, under cooler and dryer weather they set and matured a moderate quantity of balls. Here I think the fault was in the character, (I will not say weakness) of the flower itself, or possibly the weather was too damp for fructification.

(4.) Some foreign sorts whose tubers were imported in an exhausted state last April, and became liable to mildew in July, set balls earlier than any others, and in amount beyond any thing I ever witnessed. *They set them before the occurrence of mildew, while it continued, and after it passed away.* The tubers, in this case were very small.

(5.) Other sorts, both home and foreign, set fruit moderately, *both during and after mildew.*

(6.) A variety of home seedlings, which I deem stronger than any other, bore but three balls on twenty-five hills, although the foliage had an unusually upright growth, with numerous flowers.

(7.) Another home seedling of the same family, and growing near the preceding, bore one quart of balls in twenty eight hills; and yet, whether you regard its foliage or tubers, its vigor was little above our old sorts, and by no means equal to that of the family to which it belonged.

(8.) The old kidney potato was one of the first to feel disease, yet it bears a little seed almost every year upon a few scattering hills found among my field crops. These facts are not easily harmonized with any theory; a variety of potatoes cannot reasonably be expected to bear a heavy crop of balls and tubers at the same time. Both balls and tubers are the result of elaboration in the foliage. The material thus elaborated, is derived from the air and earth; now, if in a given position, one variety bears a heavy crop of sound tubers, it is not to be expected that another variety should do the same, and also yield a heavy crop of balls; since in the last case, the draught made upon the elaborating energy of the plant, must have been at least double that of the other; and as the seeds of all plants always contain more mineral ingredients derived from the soil than simple wood, bulbs or tubers; so in the case of large crops of potato balls, there is proportionably, larger obstruction of important material from the soil, than in the case of a simple crop of tubers. No one expects, that during the same year, a tree should make a stout growth of new wood and also of fruit. Unquestionably the stripping off of the very young balls, or better, of the flowers, would add, in the case of varieties given to bearing heavy crops of balls, to the crop of tubers. But whether this labor would prove profitable in the end, is a question not readily settled, depending on the price of labor, &c. May it not be suggested as probable, that in the native land of the potato, where the season of vegetable growth never ceases, the seedballs and tubers are matured successively. My Chilis of 1851, bore enormously this year. These balls mature, at least the early sets which comprehended nearly the whole crop, before the tubers were set, and they were actually gathered in the last four days of August; in the month succeeding, the tubers were mainly produced. Now, suppose this variety could have grown until the first of November, as it doubtless does in most places, where the potato is a native, it might have exhibited a large crop of tubers also; as it was, they were sufficienly numerous but small, although the vines were green until killed by frost.

Perhaps we have among our hardy trees and plants, some analogical proof of this sentiment. While a large part of our fruits, form bearing wood and fruit in *alternate years*, others of them produce them in different parts of the *same season*. Thus, the raspberry, blackberry, currant, gooseberry, strawberry, tulip, hyacinth, &c., seem in a good degree to form their flowers and fruits in the *early part* of the season, while the fruit bearing wood for the next year, the bulbs and runners are formed in the *latter part* of the season. So the plum, peach and other stone fruits form their *stones* in the *early part of the summer*, while the *mere pulp* whose formation makes a much lighter draught on the soil, is formed *later in the year*. It is familiar to every gardener that the draught made on the energy of a plant to form the pod, and almost the full sized berry of the *bean* and the *pea*, is much less than that necessary to give them maturity; hence, if the first sets of beans and peas are permitted to ripen upon the vines, the plant in most cases, soon dies, while if they are plucked green for market, the plants of most varieties, will set a second, and even in some cases, a third crop of fruit. We need light on the natural history of the potato; and it is desirable that a State, that for eight successive years has suffered, directly and indirectly, about half a million of dollars annually, by the disease of the potato, should take some efficient means to gather information on this subject. An agent sent to South America to travel in the native region of the potato, for one or two years might gather rich materials in the study of its natural history.

6. *The liability of the potato to rot, not always proportional to its weakness.*—A sort which from its weakness yields readily to morbid influences, may lose its foliage so suddenly as to hinder the transmission of the morbid circulation to the tubers. In this case the tubers will usually be sound, though if the attack were early, they will be small. In the case of a sort considerably stronger, but not entirely hardy, the disease will be less rapid and more lingering. In this case the crop will be larger, but the tubers will be more or less diseased. Had a man just two such varieties of potatoes it would be a difficult question to settle which of them he should plant.

7. *The disease of the potato not specific.*—Some diseases, as measles, whooping cough, small pox, &c., are specific; they have a fixed type. Their severity may vary with personal constitution, season of the year, and atmospheric influences, but they have a positive, unmistakeable character.

On the other hand, such affections as common colds, dyspepsia, and rheumatism, have not this specific character; certainly not in their incipient and lighter manifestations. Their existence may be often questionable. Now the disease of the potato may be compared with this latter class of diseases. It being the result of an infelicity of weather, may exhibit any degree of severity, and end with every variety of result, from that which withers a few leaves of the foliage, to that which blackens it, as with sudden frost, or to that which more gradually destroys the whole crop. If this position be true, it obviously follows, that the disease admits of no specific remedy. We must improve the constitutional energy of the race, so that it will meet ordinary atmospheric influences without substantial injury. In one aspect of the disease, it suffers with all other tropical plants cultivated here. In another, it suffers in common with most hardy plants. Both aspects of disease are explicable on the common principles of physiology. I doubt not that we should find, could the history of agriculture be accurately written, for the period of the past century, that frequent traces of this disease would be found at various times. With just as much certainty, I should expect that traces of it would be found on the Andes, and where the potato grows indigenously.

8. *Disease does not ordinarily communicate from the injured to the strong tuber.*—In the autumn of nearly every year, for three or four past, I have stored partially diseased tubers with those that were strong,—the small culls of my market potatoes. They were all designed for feeding to stock. Often a portion of them have remained until spring. They have then been found a mingled heap of small sound potatoes in a pulpy rotten mass. Had the heap been large enough to heat, doubtless all would have been lost. The fact is, the potato has a less permeable skin than any other culinary root. This impermeability forbids the transmission of ordinary liquids through it. Hence it is the last root to wither in the sun, and the last to absorb moisture. The withering of potatoes, in ordinary cases, in the spring, is the result, not of the transpiration of their juices, but of their loss by germination.

9. *New modification of disease.*—I have a new seedling in the family of my home varieties; it is quite hardy in foliage, has a very upright growth, yields well, and is a good tuber for the table. On digging, it exhibited a diseased condition entirely unlike the pervading one. It consisted in a small, wet, rotten spot on the end of the tuber, where the stolon was inserted. It extended perhaps, to one fifth of the whole crop of the variety. On cutting it off, the tuber seemed to heal naturally, and the injury was small. This variety grew late; perhaps the injured part was the result of morbid deposition amid the damps and chills of autumn.

10. *The value of green sward soil for potato crops.*—(1.) It affords, as it gradually decomposes, the most natural nourishment of the potato.

(2.) It is a slow conductor of heat, and so preserves an equable temperature about the root.

(3.) It preserves moisture in the soil.

(4.) It forms a loose mass in which the tubers may readily form. Coarse manure subserves all these purposes, but in a much less perfect and economical manner, and while the potato is weak, in a manner much less safe.

11. *Mode of securing the best tubers for seed.*—Besides the frequent renewal of the potato from the seed ball, a thing never long to be neglected, something may be done to *continue* the vigor of existing valuable varieties.

(1.) Let every cultivator plant a small plat for seed in good medium soil and fair exposure. Thus he will be likely to secure tubers of the highest health.

(2.) For ordinary winter stores such seed may be planted in somewhat richer soil. The forcing of it by a richer cultivation, for one season, will not be likely to enfeeble it sufficiently to disease it much, while the crop may be large.

(3.) Another portion of seed may be planted in very rich soil, where it may yield a very heavy crop for early market; but it will be likely to be sold and eaten before any morbid tendencies, which such a course of cultivation might produce, would be likely to develope. Neither of these last should be used for seed.

12. *A seeming anomaly.*—A variety planted very early will sometimes mature safely, when the same sort planted later so as to fall under the influence of bad weather will be diseased. So also when disease comes very early, a late growing variety may just escape morbid influences which come early, and when better weather comes mature sound tubers.

13. *The general improveableness of the potato by re-production being admitted, what is the probability of success in a given case?* The answer undoubtedly will be, that success will be in proportion to the elevated point from which you start. There will always be a tendency in like to produce like.

(1.) Suppose you start with a foreign sort whose first and leading quality is hardiness; one whose flesh perhaps is yellow and heavy, and whose maturity is late. The seed balls of such a variety will produce a family of seedlings the most of which will be hardy, though few will be highly improved in quality of flesh and time of maturity. They will need therefore a second or third re-production.

(2.) Suppose you start with seed balls from a home variety which possesses fine shape, color, and white and dry flesh, but is deficient in hardiness. The result from such seed balls will probably be a family of seedlings which will resemble the parents in all leading qualities, and some few of which will moreover exhibit a fair improvement in hardiness, though still needing a second or third reproduction from the seed ball.

(3.) Suppose the case of a variety, either imported or long cultivated at home—one that possesses a combination of all good qualities. Here it should be remembered that these qualities, particularly hardiness, will one day wear out. It should therefore be reproduced from the seed balls, even although you continue to cultivate the original variety for many years afterwards In the case of a family of seedlings from such a variety, you may expect to get proportionably a very large number of seedlings of good quality the first time you sow seed. Such are the results of my short experience. The proofs of these positions will be seen, or inferred to a considerable extent in the article to which this is an appendix.

14. *On the possible occurrence of potato disease in the native clime of that plant.*—(1.) The potato disease is reported, (see report of the Commissioner of Patents for 1847, p. 141, 142,) to have occurred at Bogota, in New Grenada, and in Peru. This asserted fact is supposed by some to be inconsistent with any and all explanation of the cause. This inference, however, is contradicted by undoubted analogical facts, while it tends to discourage all further examination of the subject.

(2.) The general laws of vegetable physiology are alike applicable to all climes.

(3.) Climate also, however benignant and uniform it may usually be, in a particular place, is not unchangeable. In a portion of France, near Strasburgh, as emigrants have informed me, a succession of unfavorable seasons within the period of the present generation, so far discouraged the culture of the grape that it was almost entirely abandoned, and was not resumed until recently. The olive also was once extensively cultivated in the south of France, but in the hard winters of 1709, 1766, 1787, 1789 and 1820, it was almost totally destroyed. Now, instead of raising a tolerable supply for the country large quantities are imported from Spain. (See Kenrick's Orchardist, under the word Olive.) Other and similar cases of failing vegetation, under occasional severities of the weather, are common in the annals of agriculture and pomology.

(4.) The potato disease has been shown to result from severities of weather according to well ascertained physiological laws. When it has grown old, and is subjected to too stimulating a course of culture, in a climate that was never quite congenial; it becomes diseased in foliage, and also often in tuber.

(5.) Now, suppose that in the native region of the potato, the usual steady temperature of the climate is interrupted by chills, rains, and lacerating winds, then, by every consideration of permanence in physiological principles, disease ought to be the result. So also, should the damp and hot weather that is common in the plains, below the common location of potato culture there, invade the higher regions, on the mountain plains, the same results must follow. It will be said that in a climate noted for its great mildness and uniformity, such changes, and of course such consequences would not be likely to occur. True, most true, but who will undertake to say, that with such, and similar facts occurring in the history of other plants, and standing out on the page of agricultural history, the thing is impossible. And when they occur, like causes must produce like effects.

It should not be forgotten, moreover, that in the mild and genial climate of the Andes, many varieties of potatoes are probably cultivated that would not bear the climate here at all. Such varieties would be likely to suffer under slight severities; such, for instance, as our common varieties, would pass through uninjured. These varieties would be the first to suffer there, in a season in the least degree incongenial, and this suffering would be sufficient to establish the fact of the occurrence of potato disease there, the relative malignity of which, we here could not judge in our ignorance of all the facts in the case.

15. *On the relative tendency of moist and dry soils, to produce seedballs.*—(1.) The Yam, and four varieties of Chilis, imported in 1851, bore seedballs equally well on moist and dry soils. There was at the same time, but little difference between the two positions in foliage and tubers.

(2.) Of my many sorts of Bogotas, both the original importations of 1848, and the numerous seedlings of 1849, none bore seed on the moist ground, though the health of the foliage and tubers was equal in the two positions.

16. *On the difficulty of getting valuable new varieties of potatoes by importation and reproduction.*—The attempt to improve the potato is not an easy one. It must be made ordinarily, with much labor, patience and skill.

(1.) The reproduction should be made *on an adequate scale*, since, in the case of seedlings from a home variety, but few out of hundreds will combine every good quality, especially hardiness, at the first time of reproduction. So also, in the case of seedlings from a foreign sort, though most will be hardy, yet few will combine all other good qualities short of a second reproduction.

(2.) So in importations from a foreign land, not only will there be much expense ordinarily, but, as the imported tubers will come from a great variety of climates, it may be, that, out of numerous hardy sorts, no one will be found exactly fitted to this climate, in its time of maturity. Out of nine varieties, noticed above, I have found but one certainly, another with some probability, fitted to all the requirements of this climate.

17. *Potato disease not mysterious.*—Leaves are the means of elaborating the juices of the plant. The quantity and quality of their elaboration will determine the quantity and quality of the crop. If the leaves are early destroyed, before the tubers of the potato are fully grown, they can not be expected to increase subsequently to that destruction. So if the leaves are diseased to any extent, the elaboration will be unhealthful in the same proportion. It is not wonderful, then, that diseased foliage should produce diseased tubers.

(1.) It is a matter of common experience that tomatoes, melons of all sorts, cucumbers, summer squashes, egg plants, and most other tropical plants, usually cultivated here, are occasionally diseased in seasons of unsteady and extreme weather, and that the potato is diseased under the influence of the same weather.

(2.) Again, it is equally a matter of experience that, in certain other states of weather, that which is hot and damp, wheat rusts, plums and grapes suffer mildew on the foliage, and rot upon the fruit, nuts are imperfect, cabbage and turnips decay. Meanwhile under the influence of the same weather, the potato rots also. Thus, the potato shows a double sympathy, i. e., with both tropical and hardy plants.

18. *California potatoes fail in Central New-York, while potatoes carried from the latter place improve in the former.*—In the spring of 1851, California tubers were brought, by a returning emigrant, and planted on the grounds of Wm. R. Miller, and others, in the town of Marcy, county of Oneida. I saw them on the 5th of August they had made a fine growth of vine, but were suffering simultaneously and equally with our old varieties.

On the other hand, it is said, on good authority, that potatoes carried from the old states recover their tone of health when planted in California. Now all this is natural.

(1.) A potato brought from California to this climate, endures a change from one that is very *uniform* and *mild*, to one that is *unsteady* and *extreme*. Is it strange that it suffers?

(2.) On the contrary, a potato transferred from this climate to California, will there find much less to try its constitutional vigor than here.

These results then, so far from being strange, are just what the circumstances demanded, and are similar to what occurs in the history of other plants.

19. *Influence of wide planting.*—I noticed a fact during the past season which though new, is exceedingly natural. *Single hills, single rows, rows planted widely apart, hills at the end of rows and on the windward side, withstand disease better than those otherwise situated.* Hence I infer, that *wide planting and open airy positions are both favorable to the health of the potato, by securing a freer access of sun and air, and thereby promoting a more healthful action of the foliage, and of course a more healthful elaboration.* Numerous cases were noticed, near the close of the season, in which potatoes situated as above described, exhibited green foliage, while all around them were dead. Has this fact any bearing on discussions on this subject?

20. *Disease modified by shape of foliage—an upright foliage best.*—My old varieties of potatoes seemed to be diseased irrespective of the shape of the foliage. But among my new seedlings *those are most healthful that exhibit a tall and upright foliage.* I do not say that this was universally the case. Some very strong varieties fell to the ground early; but the fact proved true often enough to constitute a rule. This fact needs no comment, other than that *this form of foliage admits the freest and most natural operation of air and light.* Here again is a fact that pours a flood of light on the question, is the disease of the potato the result of weather, climate and exhaustion, as contended in these papers, or

is it the result of the attack of insects, deficiencies of soil, or funguses, as others think?—(Vide Mr. Delafield's experience in wide planting of the potato, Trans. 1850, page 498.)

21. *Inefficiency of supposed antidotes.*—As mildew has been very principally concerned in the potato disease during the last two years, and knowing the effect of sulphur in resisting it upon the grape, I was induced to make a similar application of it to the potato. It was mixed with some other substances as follows: sulphur, ten pounds; wheat flour, three quarts; lime slacked, two quarts; unleached ashes, eight quarts, and plaster of Paris, equal to all the other articles combined. This mixture was made by no particular rule. The wheat flour was for the purpose of making the mass adhere to the leaves of the potato. The other articles will all be seen to be antiseptics. The whole was most thoroughly mixed by being passed together through a seive before being used. It was applied early in the morning, while the dew was upon the plant, with a small seive at the end of a long handle. The application was made to different sorts of potatoes, some of which were considerably affected with mildew, and some very little. Such was the state of the weather after its application, which was made August 6th, that it remained upon the foliage, at least more or less of it, eight or ten days. *The application had no perceptible influence either for good or evil to the crop.*

22. *The cause of disease in late ripening varieties.*—(1.) It is a settled point, in the culture of tropical plants in this climate, that their elaborations are less healthful in the cool, dark and damp weather of autumn than at an earlier period. Melons of all sorts, cucumbers, tomatoes, pumpkins, beans, and even hardy plants as peas, are never as rich and healthful, when forming their fruits or pods, late in the season, as at an earlier period. All this is equally true of the potato. A variety that matures very late, and so equally early sorts that are planted very late, will become diseased from that very circumstance.

(2.) There is perhaps another reason. While the skin of the mature tuber is very impervious to liquids, not even withering readily under the combined influence of sun and air, the skin of the young potato is very tender, and probably suffers from cold and dampness in the soil in autumn. Whatever may be the explications of the fact, some varieties that I cultivate, whose foliage, under every variety of weather, is strong, but whose tubers, instead of commencing their formation about the 20th of June, as is common, do not begin their growth until the 20th of August, and even in some cases, much later; some such hardy varieties, I say, are found diseased in tuber late in autumn.

23. *On the use of small potatoes for seed.*—Practically, I have found no difference in results between the use of large and small potatoes for seed. My experiments in this respect, have extended to various kinds, on various soils, and through many years. I have not, however, practiced it upon the same variety and on the same soil, and through a succession of years. Theoretically, I should be opposed to this latter course. An occasional use of small potatoes for seed, especially where you do not save the crop for the seed of the next year, I think entirely safe, neither leading to disease nor diminution of crop.

24. *Reasons of the increased liability of the potato to disease in late years.*—This increased liability is a painful fact. The reason of that fact, as adduced in the essays of former years, is *exhausted energy.* (See Transactions for 1847 and 1848.) This exhaustion of energy is believed to be the result of long cultivation from the tubers, instead of occasional reproduction from the seed balls. Our climate, moreover, is clearly less congenial than its native one, being shorter in season, less uniform, and exhibiting wider extremes of temperature. We have also over-stimulated it, in our anxiety to get large crops. Manuring it for this purpose has made the plant more vascular, as well as overworked its excitability. The proofs of these positions, formerly adduced, were largely inferential, and collateral. The remedy was also of the same character. That remedy was reproduction from our hardiest old sorts, reimportation from its native clime, and reproduction from such imported sorts, when they were not quite fitted to our climate, in the first instance,

by length of season. The confident tone in which this remedy was proposed, was considered by some chimerical. The justification of that confidence is now found in simple matters of fact, respectably attested and still open to the scrutiny of the incredulous. In short, importations have been made, seedlings have been produced from them, and also from our old varieties. The result of all is, such a character for hardiness and all other good qualities as affords the assurance, that a few varieties of the highest character have already been obtained, and that speedily such varieties will be obtained in great numbers. Meanwhile, all other remedies for potato disease, in the shape of change or renewal of soil, antiseptic remedies, and remedies directed to the repulsion of insects, have failed or been at best but temporary in their influence, and have not reached the root of the evil.

I have not in this, or in former papers, attempted a minute exhibition of the mode in which, probably, vegetable productions become degenerated by age. This is not a work for me, but for the most acute and discerning of vegetable physiologists. Excepting the slight show of explanation here, and in former papers, (See Transactions for 1847, p. 453–454, and for 1848, p. 418–421,) I have contented myself with the simple assumption of generally admitted facts.

EXPERIMENT BURYING POTATOES.

(The annexed account of an experiment made by Mr. Goodrich, during the past year, having been received while the Transactions are being printed, and being important as regards the disease of the potato, we give it aninsertion.)

May 8th, 1851, I buried twenty tubers of potatoes about two feet deep in the cellar of an outhouse. The object was to ascertain whether they could be preserved over one summer so as to be used the second year for seed. The place of deposit was favorable, as the cellar was cool and underlaid with living quicksand about three feet from the surface, whose temperature is to-day, at two feet from the surface, 55°. They were deposited in a flower pot and this set in another one larger, the whole was covered with an earthen plate and this again by a board; no earth was put in. The sorts of potatoes deposited were two varieties of home seedlings of 1849, one of South American Chilis, and three of more common sorts.

Results and Suggestions.

They were dug out May 20th 1852, having been buried one year and twelve days. 1st. They all had grown during the last year and formed vines which had decayed much as they would have done in a heap in the field. The tubers formed amounted to forty-eight, some of them very small. They were none of them as large as those buried, and were by weight probably from one third to one half the weight of those buried.

2. The old tubers were mostly decayed as in ordinary experience, but one of them was found sound except that it was a little cracked, while some others, though retaining their shape, were soft.

3. The tubers were colored like the originals but not so deeply.

4. They were all sound, since they endured none of those severe atmospheric changes which are conceived to be the cause of the disease, as manifesting itself in recent years.

5. They were found, when opened, beginning to sprout. This is a proof of the strong tendency of the potato to germinate when the appropriate season of the year arrives.

6. As they had had no access to soil or water, other than the pervasion of the flower pot by moist air from below, so their growth must have been the result of a mere transfer of matter from the old tubers to the new vines and tubers.

7. They were planted, except the very small ones, May 21st, in nineteen hills, and are to-day, July 31st, quite as flourishing as other hills planted with the same varieties of seed.

8. On the 25th of June, just thirty four days from the time these new tubers were planted, I discovered that the old sound tuber, noticed in No. 2 above, was sprouting, the flower pot containing it and the other rubbish of this experiment having been

left in a somewhat dark and cool position. It was at once planted, and has made a feeble growth of two sprouts four inches long.

9. To those who, on opening heaps of potatoes that had been covered too warmly during the winter, have found young tubers in the middle of the heap half grown; this experiment will not seem at all incredible. Had they been placed in an open box, but still without earth, and set upon the bottom of the cellar, so as to imbibe a little moisture, the superior access to light and warmth, which they would have thus enjoyed, would probably have made the foregoing results larger.

10. This experiment, I think, strongly corroborates the suggestion made in late years, that the heat and light of our climate are evidently too great for the normal requirements of the potato, and that this excess, taken in connection with the sudden and severe changes of our climate, indicate the true immediate cause of that disease, which has made so powerful ravages during the last nine years. When we superadd to this cause, others, such as a course of culture too stimulating, and a neglect to raise it frequently from the seedball, we have all the needful facts for forming a theory of the potato disease; a disease, which is then no longer an inscrutable mystery, but a common liability incident to all tropical plants, when cultivated in incongenial circumstances.

C. E. GOODRICH.

MR. DELAFIELD'S STATEMENT OF FARM LABOR AND ITS COST.

The following very valuable statement of the comparative view of the labor and its cost, expended on the Oaklands Farm, from January 1847, prepared by J. Delafield, Esq., is given, trusting that it may encourage many of our farmers to a like systematic course—which cannot but result in great good to themselves as well as the community at large.

COMPARATIVE view of labor and its cost expended on the Oaklands Farm since the 1st of January 1847, inclusive; 350 *acres*—273 *acres cultivated, and* 77 *acres wood land.*

MONTHS.	Number of days of labor from the 1st January to the last day of each month in the year.					Amount of wages earned and paid to the last day of each month, from the 1st January.					Av'ge cost in cts. of each laborer per day from the 1st of Jan'y to the last day of each month.					Av'ge cost in dols. and cts. of each acre of the whole farm, from 1st January to the last day of each month.					Memorandum.
	1847.	1848.	1849.	1850.	1851.	1847.	1848.	1849.	1850.	1851.	1847	1848	1849	1850	1851	1847	1848	1849	1850	1851	
January,....	104	120	110	110	079	$34 18	$43 67	$39 10	$37 56	$30 28	32	36	35¼	34	38	10	12	11	10½	08⅔	Av'ge number of men em-
February,...	189	256	225	209	151	61 54	89 78	78 92	71 43	58 66	33	35	35	34	38¾	17	26	22¾	20⅓	16¾	ployed in 1847.. 6.24
March, ...	309	406	396	328	247	97 32	141 33	139 52	112 61	91 87	31	35	35	34¼	37	28	40⅔	40	32½	26	1848.. 6.03
April, ...	464	548	528	461	370	181 56	190 21	188 97	164 79	135 03	39	35	35¾	35¾	36¼	52	55	54	47	36	1849.. 5.67
May, ...	633	701	708	596	512	258 46	256 23	264 78	216 20	182 83	41	36	37	36	35¾	74	73	76	62½	52	1850.. 6.00
June,.......	821	929	855	730	681	341 84	370 27	315 15	266 44	251 44	42	39	36	36¼	37	97	1 06	90	76	71¾	1851.. 5.44
July,.......	1,046	1,132	1,072	950	963	470 61	501 66	433 21	367 66	396 06	45	44	40½	30¾	41	1 36	1 44	1 25	1 05	1 13	
August, ...	1,254	1,332	1,240	1,187	1,156	550 12	605 33	504 86	474 94	482 12	44	45	40¼	40	41¾	1 58	1 74	1 42	1 36	1 37	5)29.38
September,..	1,464	1,487	1,412	1,400	1,306	610 10	669 73	563 38	548 84	533 61	42	45	40	39	40¾	1 76	1 93	1 62¼	1 56	1 52	
October,.....	1,618	1,637	1,553	1,628	1,450	679 12	729 02	613 35	626 75	582 45	42	44½	38½	38½	40	1 96	2 10	1 76	1 79	1 66	Av'ge No for 5 yrs. 5.87½
November,..	1,796	1,785	1,677	1,781	1,574	751 63	780 57	656 44	677 97	623 97	42	43¾	39	38	39½	2 16	2 24	1 89	1 94	1 78	
December, ..	1,954	1,889	1,775	1,882	1,702	804 62	818 39	693 61	713 23	667 16	41	43	39	38	39¼	2 32	2 35	1 98	2 03	1 90	The usual number of stock on this farm is 20 head of cattle, 250 sheep, 9 horses, and 20 hogs.
	Average of the five years is 1840 40-100 days.					Average cost of the five years is $739 40-100 per annum.					Av'ge p'r d'm cost in 5 y's is 40-100 & 4-1000 pr day					Average cost per acre in five years is $2.12 per acre.					

The income from all sources	in	1847	was	$3,044 05	from which was paid	for labor	$804 62	equal to	26 43-100	per cent.	
do	do	1848	do	2,565 58	do	do	818 39	do	31 89-100	do	The crop injured by the wheat fly.
do	do	1849	do	2,352 32	do	do	493 61	do	29 49-100	do	The crop much injured by the fly.
do	do	1850	do	3,338 88	do	do	713 23	do	21 39-100	do	Not materially injured.
do	do	1851	do		do	do		do		do	The crop injured by fly & drought.

NOTE.—British statistics, estimate the annual agricultural product of the kingdom to be in value £217,551,977; and the amount paid for the labor of production to be £46,752,446, or 23 3-100 per cent. of the products. The area under cultivation being 50,440,000 acres; the cost of cultivation per acre is 9s. 3d. sterling, or $2.06 per acre. The Oaklands Farm costs $2.12 per acre.

FRENCH MERINOS.

The plate on previous page is a very good likeness of a French Merino ram, the property of Silas M. Burroughs, of Medina, Orleans county, N. Y. This buck was imported in 1850, by John A. Taintor, of Connecticut, from the celebrated flock of M. Gilbert, of Rambouillet, France, and exhibited at the State Fair at Albany, the same year. This sheep is believed to be one of the largest, and carrying as heavy if not the heaviest fleece, of any of this class imported from France. A brief description of the French Merinos is annexed.

At several annual exhibitions of this society, Merino sheep imported from France, have attracted much attention, and inquiries are frequently made as to the origin and character of this peculiar variety. It is generally known that this family of sheep was originated in Spain, but in what manner first bred there, is not precisely known. Of their character and origin, the Hon. Robert R. Livingston, in his "Essay on Sheep," published under the patronage of the Legislature of the State of New-York, in 1809, thus speaks:

"As the Merino sheep are greatly superior to any other in Europe, it has naturally led to an inquiry into their origin, and the time of their introduction into Spain. On this subject, history does not afford all the light we could wish, Many suppose that they were originally introduced from the coast of Barbary, by Don Pedro the IVth, who ascended the throne of Castile in the middle of the fourteenth century. Others again attribute their introduction to Cardinal Ximenes, who became Prime Minister of Spain in the beginning of the sixteenth century. * * * Yet it is certain that fine wooled sheep were found in that country at a much earlier period. Strabo, speaking of the beautiful woolen clothes worn by the Romans, says, that the wool was brought from Truditania, in Spain. After the conquest of that country by the Romans, colonies were planted there, who carried with them the arts and love of agriculture which distinguished that nation of warriors. Columella, (uncle of Columella who has left us an excellent treatise on agri

FRENCH MERINO BUCK

culture) a rich colonist who lived at Cadiz during the reign of Claudius, and made agriculture his pleasure and his pursuit, was struck with the beauty of the wild rams that were brought from Africa to be exhibited at the Roman games. He coupled those with Terentian ewes which were celebrated for the softness of their wool, and procured by this means a race whose fleeces resembled that of their dam in softness, and that of their sire in the color and fineness of the wool. * * * * Pedro the IVth, more than thirteen hundred years after the death of Columella, revived his experiments on an enlarged scale, and introduced a great number of sheep from Barbary. His efforts were crowned with success, and Spain became in the fourteenth century what she had been in the time of the Romans, famous for the fineness of her wool. The race was again renewed from Africa by Cardinal Ximenes, two hundred years afterwards. From these circumstances it is highly probable that Spain owes her Merino race to the mixture of her native sheep with those of Barbary.

Of the introduction of Merino sheep into France, Chancellor Livingston says: "It having been fully ascertained by a variety of experiments patronized by the administration, aod conducted by enlightened agriculturists, that the Merino sheep might be acclimated in France without any change in their wool, application was made by Louis XVI, to the king of Spain for permission to export from thence a number of Merinos. This was not only granted, but orders were given by the Spanish monarch that they should be selected from the finest flocks in old Spain. In the year 1786, four hundred rams and ewes arrived in France under the care of Spanish shepherds. These are said to have been so much superior to any that had before been introduced, as not to admit of any comparison between them, which will easily be credited by those who know the difference between picked sheep and a whole flock taken together, even when the sheep are of one race. * * * Having mentioned the superiority in size and beauty of the national flocks of France, it may be satisfactory to know the quality of their wool.

This is given from the report of M. Gilbert, one of the members of the National Institute of France.

"The stock from which the flock of Rambouillet was derived, was composed of individuals beautiful beyond any that had ever before been brought from Spain; but having been chosen from a great number of flocks in different parts of the kingdom, they were distinguished by very striking local differences, which formed a medly disagreeable to the eye, but immaterial as it affected their quality. These characteristic differences have been melted into each other by their successive alliances, and from thence have resulted a race which perhaps resembles none of those which composed the primitive stock, but which certainly does not yield in any circumstance to the most beautiful in point of size, form, and strength; or in the fineness, length, softness, strength, and abundance of the fleece. * * * * Almost all the fleeces of the rams of two years and upwards, weigh from twelve to thirteen pounds, but the mean weight taking rams and ewes together, has not quite attained to eight pounds, after deducting the tags and the wool of the belly, which are sold separately."

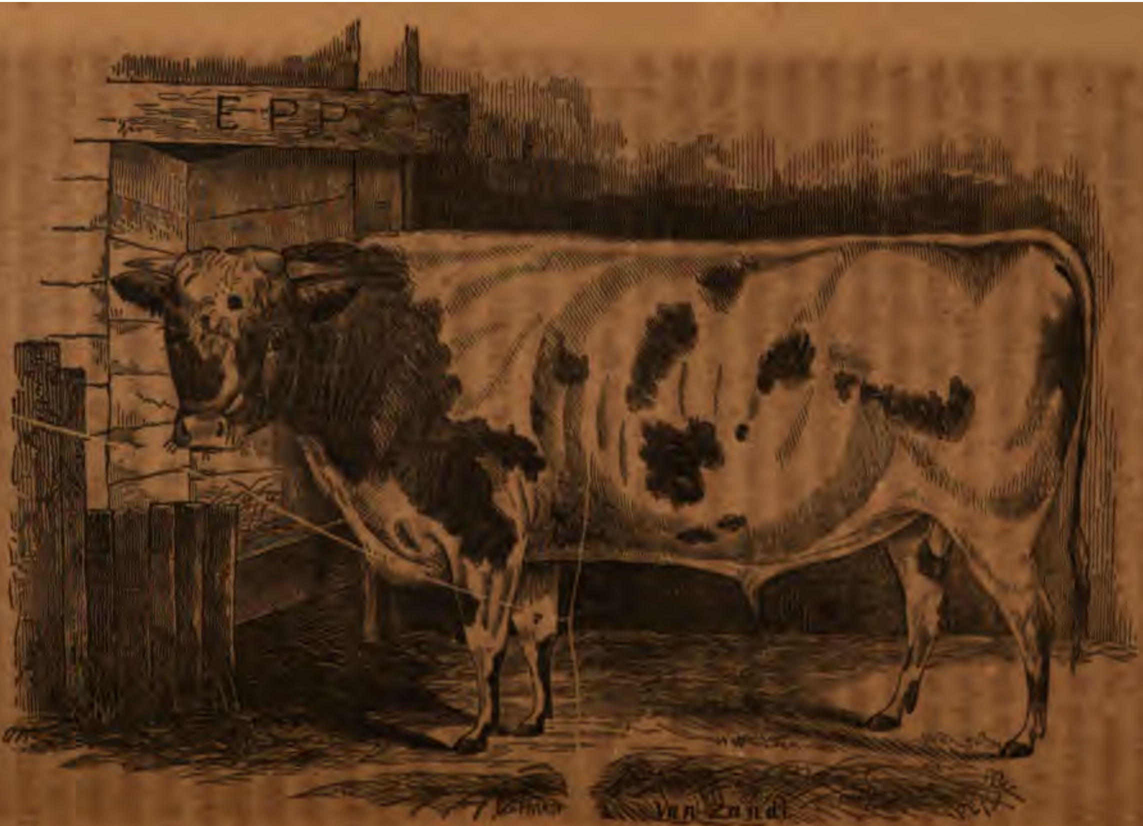
The following account of the French Merinos was prepared by the editor of the American Agriculturist, and published July, 1843, after having expended much time in examining them, and was copied into the "American Shepherd, being a history of the Sheep—by L. A. Morrell," published in 1850, page 80.

"The result of our observations, and the information we obtained with respect to these Spanish Merinos from the royal flocks of Rambouillet, and the produce bred from them in this country, is:

"1. They possess as good constitutions, and are as thrifty and as hardy as any native or imported sheep whatever.

"2. They attain a great age having been known to reach twenty years, and may be depended on as good breeders till twelve or fourteen years old.

"3. They have large loose skins, full of folds; especially around the neck and below it, on the shoulders, and not unfrequently



AYRSHIRE BULL, "DUNDEE 2d," the property of E. P. PRENTICE, Mount Hope. Winner of the *First Prize,* as a one year old, at Rochester, 1851.

over the whole body; the wool thickly covering its surface, the forehead, cheeks, and legs, clear down to the hoofs, giving the fleece when shorn and spread out in its ample dimensions, the appearance of having been taken from the carcass of a huge buffalo, rather than so small an animal as the domestic sheep.

"4. The fiber of the wool is very fine, quite equal to the best merino in Spain, and is the very antipodes of that of which so much complaint is made by the manufacturer, of being harsh, dry, crispy and wiry. The fleece opens of a brilliant creamy color within, on a skin of rich pink, and is soft, glossy, wavy, and very even over the whole body; is exceedingly close and compact, and has a yolk free from gum and easily liberated when it comes to be washed, but which protects the wool from the weather, and keeps it free of the dead ends that are so objectionable. It becomes of the purest white when scoured by the manufacturer, and still retains its mellow, oily touch, so grateful to the handling of good judges. Its felting properties are beyond dispute, making it a choice material for the manufacture of fine cloths."

AYRSHIRE CATTLE.

BY SANFORD HOWARD, ALBANY.

Considering the importance of the dairy in this country, it is a matter of surprise, that so little attention is paid to the character of the stock devoted to this object. According to the statistical returns of New-York, for the year 1845, the whole number of milch cows in the State, was 999;490. The total produce of butter is stated at 79,501,733½ pounds, and the produce of cheese, 36,744,976 pounds—only equal to 79½ pounds of butter, and 36 pounds of cheese to each cow. The greatest quantity of butter per cow, returned from any one county, where no cheese was mentioned, was 110 pounds, from Kings. The greatest quantity of cheese per cow, returned from any one county, was 226 pounds, from Herkimer; but it is probable that some butter was produced from the same cows, in addition to the cheese. From the township of Fairfield, in Herkimer county, nearly 350 pounds of cheese were returned per cow.

The dairy produce of cows, in quantity and quality, depends on their natural constitutions, and the treatment given them in reference to food, and other requisites. Both these points should receive from dairymen the strictest attention, if they expect to receive the greatest profit.[*] Every farmer may know that there is a great difference in the constitutional properties of animals Some, from an inherent principle in their organization, can produce from a given amount of food, a greater amount of flesh, or fat, than others; some, again, yield a greater quantity of milk or butter, under the same circumstances. It may have been noticed that these constitutional traits are, to a certain extent, hereditary, and that families or breeds are characterised by peculiar propensities, which greatly affect their value for special purposes.

The difference in the amount of butter yielded by cows in the same dairy, and subjected to the same treatment in every respect, often amounts to 100 per cent some giving not more than four or five pounds per week, and others eight to ten or more. In most dairies, it is reasonable to believe that, if all the cows were equal in quality to the best in the herd, the quantity of butter would be increased at least one-third. But suppose attention to the breed or constitutional qualities of cows, should result in an increase of only one pound per week for each cow in the State, for six months of the year, it would give a yearly increase of 25,986,740 pounds, which at only twelve and a half cents per pound, would give the immense annual return of $3,248,382. When it is considered that this is but for one State alone, some idea may be had of the vast benefits which would result to the whole country, from an improvement readily attainable in milch cows.

The systematic breeding of cattle with reference to the dairy, or with that as a primary object, has scarcely been attempted in this country, until within a late period, and, indeed, has not been extensively practiced in Great Britain. The great aim of the most eminent breeders having generally been the development of the fattening principle, beef being in England an object of more consequence than butter and cheese. More attention is, however, being latterly bestowed on this important department of farm-husbandry, and there are now two distinct and well-established breeds, the Ayrshire and the Alderney or Jersey, which are seduously cultivated for their dairy properties. Neither of these breeds can be said to be common in the United States, though both have been known here to a limited extent for several years.

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[*] The following remarks by Aiton, in reference to the proper mode of rearing cows for the dairy, are much to the point, and might well be heeded by our farmers.

"When young cows of the dairy breed are reared on moors, or bad pasture, and get only as much fodder as keeps them alive, they grow up, what in Ayrshire is termed a 'rough beast,' with large horns, coarse hair, thick skin, high bones, and other marks of a starveling, and they never after become good milkers. But when they are fed on better pasture, and provided with some green food, and good fodder for the winter, they grow up proper dairy cows, having the desired shapes and qualities."

The Ayrshire breed, which takes its name from the county of Ayr, in Scotland, where it originated, about seventy years ago, has become widely disseminated, and if we may credit accounts and authorities, it is now, as a dairy breed, the most popular in Britain. Several importations of Ayrshires have been made within a few years to various parts of the United States; and although the trials which have been made with them are necessarily limited, from the comparatively small number of animals, and the shortness of time which has elapsed since their introduction, their qualities as a breed are evidently such as to render them deserving of being more fully known.

The most authentic accounts represent the modern Ayrshire to have been formed by an union of several breeds, though the particulars in regard to the various crosses which have entered into the composition of the present stock, cannot be accurately ascertained. The *nucleus* of the breed appears to have been first known under the name of the "Dunlop stock," having been possessed by a distinguished family in Ayrshire by the name of Dunlop, as early as 1780. Rawlin, (as quoted by Youatt) who wrote in 1794, speaking of the cattle of Ayrshire, says, "they have another breed, called the Dunlop cows, which are allowed to be the best race for yielding milk in Great Britain or Ireland, not only for large quantities, but also for richness and quality." This, though extravagant praise, perhaps, shows that the stock was deemed to possess great merit at that early day. We are informed in Youatt's treatise, that Robert Burns, when he resided on a farm at Nithsdale, in Dumfrieshire, introduced this stock to that neighborhood. In a letter dated Nov. 13, 1788, he speaks of a heifer which had been presented to him by the proprietor of the Dunlop house, as "the finest quey in Ayrshire." (Mrs. Dunlop, it will be remembered, was a special friend and correspondent of the poet.)

Professor Low says, in his *Illustrations*, in reference to the history of the Ayrshires, "authentic records are wanting to show by what progressive steps the breed has been moulded into its present form." He adds, however, that at the time he wrote, 1841, they had "spread over a large tract of country, and by continued mixture with one another, acquired such a community of characters as to form a distinct and well-defined breed."

The most reasonable conclusion from all that has been written in regard to the origin of the modern Ayrshires, taken in connection with the points and characters of the animals themselves, is that they were produced by a union of the blood of the Holstein or Teeswater short-horns, and the Alderneys, with the ancient stock of the district from which they take their name. This conclusion coincides with that of several writers. The stock indicates the blood of the Alderneys as plainly as that of the Short horns. Col. Le Couteur, in his paper on the Jersey or Alderney cow, published in the "Transactions" for 1850, refers to a statement by Quayle, that the Ayrshire was a cross of the Short-horn and Alderney; and adds himself, that "there is a considerable affinity between these two breeds. The writer has noticed Ayrshire cows that seemed to be of Jersey origin." Rawlin also says, in reference to the Ayrshires, "It is said to be a mixture by bulls brought from the island of Alderney, with their own or the old race of cows." Martin says, "at some period or other there has evidently been a cross with the Durham or Holderness, and perhaps also with the Alderney."

Professor Low sums up the subject as follows: "From all the evidence which, in the absence of authentic documents, the case admits of, the dairy breed of Ayrshire owes the characters which distinguish it from the older race, to a mixture of the blood of the races of the continent, and of the dairy breed of Alderney."

As to the leading points and characteristics of the Ayrshires, no description is more correct than that of Prof. Low, as follows:

"The modern Ayrshire may stand in the fifth or sixth class of British breeds as respects size. The horns are small, and curving inwards at the extremity, after the manner of the Alderney. The shoulders are light, and the loins very broad and deep, which is a conformation almost always accompanying the property of yielding abundant milk. The skin is moderately soft to the touch, and of an orange yellow tinge about the eyes and udder. The prevailing color is a reddish brown, mixed more or less with white. The muzzle is usually dark, though it is often flesh-colored. The limbs are slender, the neck small, and the head free from coarseness. The muscles of the inner side of the thigh, technically called *the twist*, are thin, and the haunch frequently droops to the rump—a character which exists likewise in the Alderney breed, and which, though it impairs the symmetry of the animal, is not regarded as inconsistent with the faculty of secreting milk. The udder is moderately large, without being flaccid. The cows are very docile and gentle, and hardy to the degree of being able to subsist on ordinary food. They give a large quantity of milk in proportion to their size and the food they consume, and the milk is of excellent quality. Healthy cows, on good pastures, give 800 to 900 gallons in the year, although taking into the account the younger and less productive stock, 600 gallons may be regarded as a fair average for the low country and somewhat less for a dairy-stock in the higher."

Stephens, in "The Book of the Farm," and in "The Farmer's Guide," speaking of the milking properties of the Ayrshires, says, "They are in such high repute on that account that most of the nobility throughout the kingdom are furnished with Ayrshire cows." In relation to their color, he remarks that red and white are most common; sometimes a clear red one, and even those of a yellow, and dun color are to be seen, and that "such colors are known to be borne by stocks of the purest and oldest blood." In regard to shape, he says—"The cows are best liked for a very sharp shoulder, and wide hooks [hips,] and pelvis,"—the head and neck light and neat.

In regard to the yield of Ayrshire cows, Martin says—"It has been estimated that a good Ayrshire cow will yield for two or three months after calving, five gallons of milk daily; for the next three months, three gallons daily, and a gallon and a half for the following three months. This milk is calculated to return about 250 pounds of butter annually, or 500 pounds of cheese. This is however, somewhat exaggerated—four or four and a half gallons of milk a day is about the average product."

Aiton, in his "Survey of Ayrshire," rates the yearly average, of the best of this breed, at 4,000 quarts within 300 days after calving, or until they run dry. He admits however, that this is above an average, and that probably 600 gallons, or 2,400 quarts, may be about the common yield of the Ayrshire stock. The author of "British Husbandry" remarks in reference to this yield—"If equalled, we believe it will not be found exceeded by any other breed in the kingdom."

Dickson, in his treatise "On the Breeding of Live Stock," says of the Ayrshires—"The cows have obtained a world-wide celebrity" as milkers, and are to be found in most of the dairies of noblemen and gentlemen in every part of the kingdom." He speaks of one which belonged to George Rennie, Esq., of Phantassie, which on a bet, was proved to have produced ten imperial gallons, or forty quarts, daily.

The success of Ayrshire cattle in this country has been somewhat various. Some importers have been unfortunate in their selections, and have by no means obtained fair specimens of the breed. It is a fact, nevertheless, that most persons who have given the breed a trial, have expressed themselves very favorably as to their comparative merits. They have proved more hardy than the Short-horns, and have sustained themselves on short pastures as well as any cattle in the country. Some of the first importations of the breed were made by J. P. Cushing, Esq., of Watertown, Mass., and by the Trustees of the Massachusetts Society for Promoting Agriculture. The first importation by the Society is believed to have been made in 1837, and that of Mr. Cushing a year or two previously.

The late E. Phinney, Esq., of Lexington, Mass., stated to the writer that one of the cows first imported by the Society, while in his keeping, produced sixteen pounds of butter a week, on grass feed. Mr. Cushing kept a particular account, which was published in Colman's "Fourth Report on the Agriculture of Massachusetts," of the quantity of milk given by four Ayrshire cows, for several months in succession. The account for one of them is carried through the year, (1837) and it appears that she yielded 7,728 pounds of milk, equal to 3,864 quarts, beer measure, (which is one-fifth more than wine measure.) The cow *Ayr*, owned by Mr. Prentice, near Albany, dam of the bull *Dundee 2nd*, whose portrait accompanies this article, has given on grass feed only, twenty quarts of milk a day, by actual measure, and she continues in milk till near calving. This cow is of very small size; her figure was given in the "Transactions" for 1849, p. 84. A grand daughter of hers, five years old, owned by Mr. Prentice, produced in 1851, twelve pounds and seven ounces of butter, per week, on grass feed, without any deviation from the ordinary treatment of the herd.

In fact, whether the Ayrshires are judged by their actual produce, or by the external points which by experience and observation are acknowledged to denote dairy qualities, it must be admitted that they take a high rank. From a fair consideration of their merits, it is believed that their adoption for the dairy, would secure the following advantages over the stock commonly kept for that purpose in this country.

1. A greater quantity of milk, butter and cheese, for the food consumed. 2. Greater uniformity in the general character of the stock, from its inherent or hereditary qualities. 3. Better symmetry and constitution, and greater tendency to gain flesh when not giving milk.

Few of our dairymen pay any regard to the properties of their cows, except the property of giving milk. Some have even been heard to declare, in a boasting way, that they "cared not how a cow *looked*, if she only gave the milk." Such is entirely too contracted a view of what is required in the case, and it is strange that observation should not have taught them the absurdity of such a notion. The constitution should be regarded as of the first consequence. Without this, no dependence can be placed on the continuance in the stock of the properties desired, or of the animals possessing the health and vigor which is essential to profit. It is true that a cow of weak constitution, uncouth form, and coarse bone, when highly fed and carefully protected, may give much milk; but is generally deficient in richness, and she requires more and better food and better shelter than a hardy one, and yet will fail at an early age. Her weakness also exposes her more to various diseases, which for lack of energy to resist, are likely to occasion serious or fatal injury. Thus, excepting for use in the dairy for a short time, she is nearly worthless. Her progeny are inclined to inherit her defects, requiring, if reared, the most careful nursing, and seldom prove profitable in the end.

It has been found in breeding sheep wholly for wool, even for *fine* wool, that it is necessary to pay particular regard to the points which give a symmetrical form to the body and denote hardiness of constitution, in order to produce a healthy and profitable stock. Similar principles apply to all animals. The breeder of dairy stock, therefore, should not be satisfied without uniting in his animals the points which denote both constitution and milking properties. These are not inconsistent with each other, and when combined, greatly enhance the aggregate value of the dairy cow. Even the fattening tendency should not be wholly overlooked.

It is for beef that all cows are ultimately wanted, and it has been proved that a moderate developement of the fattening propensity, indicates the habit of giving rich milk. But the fattening tendency should be kept in subserviency to that of giving milk; it should not be manifested to the extent which would lessen the value for the dairy by converting the food of the animal into fat at the time it was wanted for butter, but should be possessed to the degree indicating the butyraceous quality of the milk, and a tendency to thrive when dry. This balance of the dairy and fattening properties, can readily be discerned by the *eye* and *fingers* of a close, practical observer, but is difficult to describe in words.

A good example of what may be accomplished in this respect, is furnished by the improved Jersey or Alderney cow. This breed was formerly inclined to be ill-shaped, rough and rugged; some of them, in the language of Col. LeCouteur, who has furnished an account of their improvement, were "real 'Meg Merriles' of cows." The figures which accompany Col. LeC.'s account, published in the "Transactions" for 1850, illustrate the happy transformation which has taken place in this stock. The defects alluded to have been, in a great measure, bred out, and the animal has greatly increased in value by the properties which have been added.

At the present time there are several breeders in this State who are turning their attention to the Ayrshires. The principal stocks known to the writer, are those of E. P. Prentice, near Albany; L. G. Morris, Fordham, Westchester county, and J. C. Tiffany, Coxsackie. Of these Mr. Prentice's comprises the largest number, over twenty head. They have been derived from the imported cow *Ayr*, (before mentioned,) the importations of Mr. Ward, Capt. Randall, Mr. Lawson, and Mr. Shurtleff, of Massachusetts, and one or two other imported animals.

Although the Ayrshires, as a breed, are far superior in symmetry to our common dairy stock, they might be still further improved. Dickson, in the last edition (1851,) of his work "On the breeding of live stock," states that sufficient regard has not been paid to symmetry or points in selecting the Ayrshires for breeding, the chief object having been to rear the calves of great milkers. Some breeders, it is gratifying to know, are now paying special attention to this subject. Mr. Prentice has taken important steps in reference to it, and has been greatly favored by the use of two very superior bulls, viz., *Dandy*,* imported by S. G. Ward, Esq., Lenox, Mass., and *Dundee* 2nd, by the former, out of *Ayr*. Both these bulls are beautiful animals, having all the points which the most fastidious eye could require in an animal of this class, and possessing the blood of the best families for the dairy. The progeny of the first have acquired sufficient age to prove the calves not only remarkable for beauty of form, but also superior milkers; the progeny of the latter are even more promising though yet too young to be tried.

ON THE PREPARATION OF MANURES FOR ROOT CROPS.

DANIEL L. BAKER.

UTICA, *January* 14*th*, 1852.

B. P. JOHNSON, Esq.

Dear Sir—Agreeable to my promise, I herewith transmit you my method of saving and making manure, which I practiced in Europe for several consecutive years, and that with the most satisfactory results, but more especially when such manure was applied for the root crop; such as carrots, mangel wurzel, beets of various kinds, turnips and parsnips. The latter, I have found from practical experience, to be the *best root crop* for the stall feeding the milch cow, during the winter months. *Best*, not only from having grown more (by actual measurement,) per acre than of beets and carrots, but from the well known fact of its containing much more saccharine matter than the various roots usually grown for the purpose of stall feeding the milch cow. But I am digressing from my subject, which I consider, cannot fail to be more or less interesting to all who are cultivators of the root crop, whether upon a large or small scale. In order to arrive at any satisfactory or well defined principles as regards the best system to be pursued in growing the same, a series of judicious and carefully recorded experiments must necessarily be adopted; from my own practical experience, I have often found this to be highly indispensable, and have often regretted that more particular attention should not be paid to the carrying out of such experiments; as such pursuits are not only attended with profit, but furnish a valuable source of information and recreation; and I maintain with a writer of great taste, that innocent enjoyment is not a vain pursuit, it inspires us with love and gratitude, towards Him who has not only given to us a glorious creation to enjoy, but faculties wherewith to enjoy it. But notwithstanding, whoever carry on such experiments *must* fail in three fourths of their undertakings, still it should be remembered, that such failures are of the *utmost importance*, and should, therefore, be regarded as secondary in value only, to those which succeed.

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* For portrait of this animal see "Transactions" for 1849, p. 86. He and his dam, also imported by Mr. Ward, received the highest prizes in their classes, at the show of the Highland Agricultural Society of Scotland, in 1845.

The nature and properties of the various roots to which the manure is applicable for their greater development, or the method of tillage, I will not attempt to describe, having so recently arrived in this country. Suffice it to say, I will simply describe my method of making and mixing the said manure, which after a fair trial, will be found a most powerful fertilizer.

In twenty cubic yards of fresh loam, (the surface of a good old pasture, bank, &c., from six to twelve inches deep, according to quality,) add from 200 to 250 gallons of *pure urine*, carefully collected in tanks, from horses, cows, or any other neat stock, with 200 gallons of night soil, and 40 bushels of fowl dung and sand, one-third of the former to two of the latter. The heap to be well turned and otherwise incorporated, and when tolerably dry, add from 1 to 200 gallons more urine, stir the whole well together, and spread the same (from carts or otherwise) upon one acre of land. If intended for the drill, the sand to be omitted and a sufficient quantity of charred substance substituted, to absorb the various liquids; if to this preparation from six to eight bushels of agricultural salt, and the same quantity of ashes be added, they would form valuable auxiliaries.

To the foregoing, I beg respectfully to submit the comparative result of experiments, with various descriptions of roots, (*carried on in England*,) during the year therein mentioned; the land on which the experiments were carried out, was of an adhesive character, resting upon a retentive clay soil, which had been well drained, and was manured in addition, with farm yard dung, at the rate of 15 loads, of 50 cubic feet each load, and the produce stated includes both tops and bulbs.

I am, dear sir, most respectfully yours,

DANIEL L. BARKER.

Dates.	Mangold Wurzel.			Yellow Globe Beets.			Swedish Turnips.			White Carrots.			Hollow Crowned Parsnips.		
	Tons.	Cwt.	Lbs.	Tons.	Cwt.	Lbs.	Tons.	Cwt.	Lbs.	Tons.	Cwt.	Lbs.	Tons.	Cwt.	Lbs.
1841	41	12	0	43	13	12	33	0	16	42	10	13	37	8	0
1843	38	10	36	41	12	3	31	12	0	43	0	10	31	0	0
1845	43	16	0	44	2	0	31	0	0	46	0	12	38	0	16
1846	37	12	10	42	0	8	28	0	13	40	0	0	32	0	12
1847	43	17	13	39	12	10	33	12	13	43	12	0	39	0	12
1849	45	20	13	49	10	10	39	17	12	49	0	12	41	0	17
1850	41	13	3	45	13	12	38	12	0	46	0	0	40	0	12

DONATIONS FROM MR. LOUIS VILMORIN, PARIS.

Letter from Mr. Alexander Vattemare, International Agent, acknowledging the reception of donations from the New-York State Agricultural Society, to the Agricultural and Learned societies in Franceand the letter of Mr. Vilmorin, in relation to the subject of exchanges, &c.

Paris, *May* 5*th*, 1851.

B. P. Johnson, Esq., *Corresponding Sec'y of the N. Y. State Ag. Soc.*

My Dear Sir—I have the honor of acknowledging the receipt of your most interesting journal. I have been so much engaged since my return to the head quarters of my operations, that I have found it impossible to write you sooner, to congratulate you on the continued successful labors of your society; labors so highly appreciated in Europe, and especially in Paris. All the books entrusted to me by the society, for our several agricultural and other learned societies of France, have been faithfully distributed; and I am just now engaged in receiving and collecting the returns, which I trust will be worthy of acceptance by the society. The principal object of this letter, is to communicate to you copies of two letters, which I consider of great agricultural and horticultural importance to the two worlds. I therefore most respectfully call the attention of your society to the subject, and beg of you to give the same the greatest publicity possible. The first is from the Central Horticultural Society of France, written by its Secretary General.

PARIS, *March* 22, 1851.

"*Sir*—I am instructed by the Central Horticultural Society, to express to you its grateful acknowledgments, for the magnificent and important works presented by you at its last meeting, on the 20th of this month, in the name of the American States, Legislatures, and Scientific Associations. The society will cheerfully respond to your proposals, relative to the exchange; hoping thus to promote international relations with America—relations, of which you have so well illustrated the importance, and developed the happy consequences for the welfare of our two countries.

"The special committee proposed by you, was immediately appointed by the chair, to examine the question, whether it would not be possible to respond to your views—that France and America may reciprocally participate in their mutual horticultural exhibitions. We will take care to communicate to you the results of their proceedings, and report in time, (if this can be done) for the Horticultural societies of the States, of whom you are the agent, to prepare themselves for our exhibition in September next, We have the honor of addressing you several copies of our annals, to be presented in the name of the Central Horticultural Society, to our sister societies in the new world.

"With great respect, I have the honor to be,

"BAILLY DE MERLIEUX.

"Mon. A. VATTEMARE, Paris."

And to give a stronger evidence of the gratification of the Society, on receiving the communications and gifts which I had to make in the name of the New-York State Agricultural and other Societies, I was immediately presented with the silver medal of the society.

A few days after the call made to the Horticultural Society, I had the honor of making a similar visit and presenting gifts to the Central Agricultural Society. The most flattering demonstrations were made, upon the reception of those glorious specimens of the genius and liberality of America; my proposal of a universal Agricultural and Horticultural Fair in Paris, met with general approbation; and a special committee was appointed by the chair to inquire into the best mode of transporting and preserving plants, fruits, &c., from one hemisphere to the other. I was requested to beg of the Agricultural societies of the American Union, to form corresponding committees, that they might work simultaneously together in the successful realization of this great and important undertaking. M. Vilmorin addressed me the following letter:

"*Paris, April 27th*, 1851.

"DEAR SIR—I am just now engaged in collecting specimens of seeds desired by the Patent Office, and I hope to be able to forward them to you about the middle of next week. The seeds would have been sooner ready, were the list of them not so large, and I was not obliged to select the greatest part from my own private collection; a task which must be attended to by myself. I am preparing likewise, as I promised you, a series of ears of our principal grains, the study of which is one of the most interesting that can be made. And if any of the agricultural societies of the American Union feel disposed to enter seriously into this study, I shall be happy to offer them a collection of about all the European varieties, in exchange for those cultivated in America. The seeds delivered to you by the U. S. Patent office, and the New-York State Agricultural Society, for presentation to France, reached me through the Museum of Natural History.

"For the purpose of showing to you how important and useful exchanges of this nature can be to our two nations, allow me to give you here a summary account of the results and remarks proceeding from my cultivation of these seeds.

"Although most of the varieties comprising this collection were nearly the same as those cultivated in France and England, their presence here was, nevertheless, of a real importance, by affording us an opportunity to establish a concord of names, and also furnishing us a good page in the Franco-American Horticultural and Agricultural Dictionary. Some of those seeds have received cares and attentions in the old continent, which have improved them, and made them superior to their American equivalents. For others it was the reverse; and we found some varieties, which, in your collection, are evidently superior to ours. In general, it seems to us, that for the agricultural plants, particularly, remarkable care is paid in America to the purity of races, which may be considered as the *criterion* of a highly improved cultivation. Among these plants is one already known to us, but which we never before had an opportunity of studying so thoroughly. I mean the sugar corn [sweet corn.] I do not know exactly what its present use may be in America, besides its culinary use, for which it is so much thought of, but, evidently, there is something besides in it which will, ere long, render it valuable. Starch, which forms the principal basis of the "*gramineous*" seeds has passed, in this singular variety, through modifications which bring it nearer to "*dextrine*," and have brought it more than half the way which separated it from its conversion into sugar. In its present state, Indian corn might be employed in most of the industrial uses of the gummy substances procured from *fecula*.

"The species of beet-root for cattle, appears to us, in the American varieties, to have been shaped with intelligence, and in view of the products to be expected from them. Though smaller in general than our own, they have smaller leaves; and thus give, in quality of raw products, a much larger proportion of its useful substance. A smaller kind of kitchen garden beet, called *radish beet*, has far surpassed, in our experiments, the best French or English varieties of this vegetable.

"The three varieties of winter wheat contained in the collection, were most remarkable for the beauty of their grain; but, as my former experiments enabled me to foresee, and although two of them were very early ripened, they reached maturity but very imperfectly with us. It is remarkable how little the varieties of American wheat are adapted to the climate of the central part of France. They are almost always so much attacked by microscopic parasites, (rust and mildew) that their crop is always greatly reduced. In 1846, when the scarcity of corn among us brought the importation of a large quantity of American wheat here, I made a great number of seed beds of the different kinds of wheat, but they were all so invariably attacked by these parasites, that I never derived any benefit from them, except a certain number of botanical observations, which served to produce a comparison between the American and French varieties.

"I close this by repeating to you, that in the intellectual exchange, of which you have made yourself so useful a medium, I shall always keep at your disposal specimens of seeds, products and documents relative to the study and cultivation of vegetables, &c., to be presented by you to those societies of the American Union which take an interest in communications of this nature; convinced as I am, that each step made towards their respective knowledge, is of real utility to our two countries.

"Very respectfully yours,

"LOUIS VILMORIN."

Please to communicate to Dr. Beck and to the American Institute, that I am preparing collections for the State Library and for the Institute, which I trust will be worthy of their acceptance, and serve as additional testimonials of my lasting gratitude for the unbounded liberality and generous hospitality with which I have been treated by the government and people of your glorious State.

With great respect, I have the honor to be,

Dear sir, your very humble servant and friend,

A. VATTEMARE.

CALIFORNIA.

AGRICULTURAL CAPABILITIES—BY H. G. WARNER.

San Francisco, July 31, 1851.

To the President of the New-York State Agricultural Society:

SIR—After sojourning in California over fifteen months, it very recently occurred to me that I might contribute a trifle of interest, if not profit, to the members of your society, by transmitting a few articles for the approaching Fair. Regretting exceedingly, as I do, that I cannot be present to participate in the pleasures to be derived from attending this annual festival, to be held, as I learn, in the city of my residence and best hopes—a Fair that I doubt not will surpass all preceding ones of the Society not only, but be upon the whole, more magnificent than any one of like nature ever held upon the continent,I take the liberty to send you a few unpretending specimens of Pacific productions, intrinsically worthless, but perhaps of some little value on account of their locality—and I must apologize for the meagre show they make, but can only say, that since I conceived the idea of sending them, I have had no time or opportunity to do better. I may add to this hereafter, and shall take pleasure in so doing if in my power.

I am not informed whether the New-York Society have taken measures to collect information respecting the agricultural capabilities of California, or indeed, whether they deem it within the proper scope of their inquiries—my business, some years past, having been such as to exclude much attention to these matters—but I venture a few remarks upon the subject, that my *friends* will appreciate, as reliable, though they may not be of great interest or use, by way of information.

California has no great variety of soil, and a very undulating surface, less of which is covered with timber than in any other portion of the continent seen by me. One of the most striking features of the country is the boldness with which the mountains stand out, marking their smooth and graceful lines upon the horizon. While they are lofty, and often destitute of any large timber, covered with herbage and clumps of dwarf trees and shrubs, many of them have a strong rich soil to the very summit, and even at an elevation of over 3,000 feet above tide water, in some localities, wild oats grow in abundance. There is much similarity in the nature of the soil, so far as my observation has extended, it being mostly of a dark and adhesive character, of a fair texture, and very fertile. Perhaps no state in the Union, of an equal area of feasible land, has a more uniformly rich soil. To me it appears volcanic, judging from the best information to be obtained of the soil in regions known to be of that nature. While there are now no active volcanoes in California, there are said to be several extinct craters plainly discernible, and the whole country presents evidences of eruptive changes throughout, which may account for the great similarity of soil in the different districts of the state, and also its undoubted richness. Notwithstanding the smoothness of surface of much of the mountain regions, there are immense tracts, that will not, for a great length of time, if ever, be brought into use. These consist of the more precipitous portions of the highlands, and the extensive Thulares lying in the neighborhood and adjacent to the principal rivers.

The Sacramento and San Joaquin, (san wau-keen) are sluggish streams, and in many places their banks are higher than the ground a short distance from them; and when they overflow, like the Mississippi, they pour upon the adjacent plains immense volumes of water, that remain on some large tracts, the whole year. These thulares or marshes, thus formed, are quite extensive on the lower portions of the Sacramento, and the San Joaquin sluggishly winds through these low grounds, entirely covered with a monstrous growth of rushes, for near a hundred miles above its confluence with the Sacramento, at the head of Suisun (Swee-soon) Bay. These marshes extend back several miles, at some points, and where the two rivers unite, there are perhaps a hundred square miles of this character, cut up into thules and low islands.

No portion of California, except what lies west of the Steppes or Foot hills below the Great Sierras, is susceptible of improvement to great extent, and vast tracts of the upper country are scarcely habitable for any purpose. The coast range of mountains, running parallel with the former, occupies still another large portion of the state, never to be used for farming purposes, and minor ranges and heavy spurs extending far into the plains, together constitute a formidable amount in proportion to the quantity of feasible lands to be found in the State. Considering the aggregate of waste lands, from all the causes above mentioned, it is perhaps no unreasonable estimate, that not more than two fifths of the lands of California, below the great mountains, west, can ever be occupied for farming purposes.

Is this then to be an Agricultural State? Richness of soil is not the only requisite for the farmer. Timber, good climate and seasonable rains are indispensable. There is little timber of value in the State, save in the vicinity of the rivers, and in remote mountain districts, where it is worthless for such uses. As to the climate, I do not believe another upon earth surpasses it, for health and comfort, at least so far as my observation is concerned, and from my best information. It must be remembered, however, that no rains of importance fall here from the 1st of May to the 1st of November, generally near six months. In a country not well supplied with living springs and durable streams, under such a continuous drought, cultivation cannot progress, and agriculture, as we understand it in the east, cannot prosper. Limited sections of the country are readily irrigated, and others have natural moisture sufficient to supply the growth of vegetables and some of the grains, but to stamp a country *agricultural*, this essential element must abound.

During most of the dry season, the plains of California are parched, and all vegetation, in many places, becomes entirely dead, so that they burn over for thousands of acres in extent, and crack to a considerable depth. Cultivation of the ground, therefore, for five or six months, is entirely impracticable. It should, however, be remarked, that in some localities, agriculture is pursued with great success, and especially in the valleys surrounding San Francisco Bay, where the lands are less affected by drought. In these sections, winter wheat and spring crops are raised and grow luxuriantly, and are already extensively cultivated; wheat may be sown any time during the winter, or rainy season, and will in many situations reach maturity before the drought becomes oppressive. But this is by no means universal. The spring grains can be raised with greater certainty, and better success. Indian corn cannot be grown here to advantage, except in low situations, on account of the continued drought and cool nights. In soils adapted to their growth, and where irrigation can be resorted to, vegetables prosper beyond example. The largest turnips, beets, cabbages, &c., that ever fell within my observation, with a fair yield of potatoes, have been produced here, and as for melons of all descriptions, they probably were never surpassed. Water-melons weighing upwards of forty pounds, are often raised, and Valparaiso and other species of the squash or pumpkin tribe, grow to enormous sizes. Fruit prospers generally, when cultivated, and grapes especially, yield wonderfully, and are of delicious flavor.

It is proper, while speaking of the great impediment to agriculture in California—the severe drought that annually occurs—to state, that less of it is experienced as distance from the coast and the latitude increase. The drought comes later and relaxes earlier in those portions of the country. I have met with refreshing showers even in Sacramento, after the rains had entirely ceased at San Francisco. Much of the country, including the uplands of the mountain slopes, and the large tracts bordering upon the rivers, too low and wet for improvement, is now used for grazing, and will always be more or less thus occupied, and it is not unlikely, that at some future period, the latter grounds may be, to some extent, devoted to the cultivation of rice. But as a whole, the State is, beyond controversy, much better adapted to a pastural than an agricultural use; the climate, seasons and natural capabilities being clearly favorable to such a destination. It cannot, in my belief, become an *Agricultural State.*

It may not be entirely profitless to make a few suggestions in a plain way, upon the causes that produce the periodical winds experienced here, and annual droughts and rains that continue, alternately, about one half of the year, of which so much is said. Speculations are often made by travelers on these subjects, but I will venture a simple theory accounting for both, in a manner satisfactory to myself; and never, to my knowledge, advanced by others. These periodical changes are nearly uniform, although not equally severe in the degree of drought or wet experienced. I have here no authors to consult, and as ideas are what I desire to communicate, shall content myself with plain language, that while it may lack technicality, I hope may be intelligible. The winds on the Pacific coast commence their annual current from the north-west, about the first of May. As the sun approaches the northern latitudes at that season, the immense bodies of ice in the polar regions begin to dissolve, and rarefaction of the cold atmosphere takes place there, to a vast extent. Simultaneously, as the sun recedes from the south, a correspondent condensation of the atmosphere ensues in that region. As the rarefaction at the north goes on, vent is naturally sought by the swollen air. At the same time, as the condensation progresses in the south, the vacuum produced must be supplied from abroad, and a current of air is, by the operation of both these causes, hence created, by obvious natural laws. This current, which is no other than the winds under notice, continues as long as the causes operate, and ceases when the sun retires towards the south.

At this period, or about the first of November, commences the counter-action, and the winds, though less strong, or less felt, perhaps, because more bland, prevail from the opposite direction, for nearly the same length of time—six months. From these phenomena, as remote causes, I deduce a theory to account for the alternate wet and dry seasons; and I will barely state the outline, not having time at present, if I were able, to go into a scientific detail of minor considerations bearing upon the question. These westerly winds constantly drive the rain clouds landward, so that for six months, none, or few of them can reach the coast, or approach near it; and for a like reason, when the current of wind sets from the interior towards the coast, the clouds all take that direction, and are discharged upon the districts over which they are driven. The exhalations and their condensation and descent in the form of rain, though a subject of great interest, cannot here be discussed; and I will not take time to prove, that the rain clouds in this region are filled by vapor arising from the earth only, but by careful observation for fifteen months, am led to believe this to be the fact.

That the process of forming rain clouds is constantly going on cannot be denied, and the water thus collected must somewhere fall. In the absence of any strong current of wind prevailing in one direction, this vapor, when sufficiently condensed in the upper regions of the atmosphere, would be discharged again upon the earth in the form of rain in the vicinity of its origin. But a strong wind operating constantly to drive these clouds in one direction, would leave dry the districts of country over which it passed, unless a supply were constantly kept up to the windward. These clouds, then, being driven towards the interior and southward, during the summer, cause the rains in the central portions of the continent, at that season. So when the current changes, and the winds prevail in the opposite direction, the rains fall in the upper latitudes, and nearer the coast. For reasons that are obvious, if this theory be based upon the true philosophy, the effects thus produced, are less sensible in regions farther removed from the central action of the prime cause. Consequently, in higher latitudes, and remote from the sea coast, we find the seasons more equable in this respect, and free from extremes of alternate drought and rain.

With my best wishes for the continued prosperity of the Society,

I am most respectfully yours,

H. G. WARNER.

SPECIMENS OF TIMBER, &C., FROM THE PACIFIC COAST.

Oak from the Sacramento Valley.—There are several species of oak in California, some of which resemble the oaks of the Eastern States. The specimen sent is similar in growth and foliage to the eastern white oak, though it is both more graceful and beautiful. Another species somewhat resembles the rock oak, especially for its glossy leaves. They grow in almost all situations, and upon the plains and prairies appear much like the timber upon the openings in Illinois and Wisconsin; their foliage is, however, much finer. The timber of these oaks has not the strength and firmness of Eastern oaks. There is a *dwarf live oak* abounding here, that in its creeping habit forms the most dense and impenetrable chapparal; a safe covert for the wild beasts that inhabit the country. Some of these dwarfs make fine shades and are very picturesque in appearance.

Red Wood.—The timber commonly known by this name, seems to be a species of cedar, as it bears a resemblance to the latter in some particulars. The wood, excepting a thin sap, is brown, and nearly of the same color of red cedar; the growth of the tree is more like that of the arbor vitæ. The timber is firm and heavy, and in this resembles the red cedar, though it is not so fine in texture. The most remarkable characteristic of the tree, is its enormous size: forty-five feet in circumference, and 200 feet high is no uncommon measurement of one of these trees, and they are found larger and taller than this; they split with the greatest ease, and building timber manufactured from them is equal to any. The red woods abound on the coast range of mountains, as also to some extent in the Great Sierras. The timber is said to be very durable.

Sycamore.—This tree resembles the common button-wood of the east, though the leaves are smaller, and more like white maple, and the seed is produced in a small stem of six or eight inches in length, studded with balls, a little similar to those of the button-wood. It is a more graceful tree, and in the open plain is often quite stately. It is common on the rivers of the upper country and the adjacent plains.

Willow.—This abounds upon the rivers and low lands, and especially on the borders of the Thulares; and although there seems to be more than one species, yet that most common is similar in growth to the large brown willow in the East, found in like situations. On the Sacramento, Feather and Yuba rivers, the banks are often lined with them, growing thick and slender. They are of little value, like nearly all the species of willow.

Oregon Pine.—The growth of this tree, which is abundant on the Columbia river and its tributaries, is unlike that of some of the eastern pines. It resembles the spruce, while the timber is nearly like that of the yellow pine. The height to which the Oregon pine attains, is wonderful. It being, not unfrequently 300 feet, as many assert. The trees grow remarkably slender and straight. A liberty pole erected on the Plaza in San Francisco, July 4, 1850, brought from the Columbia river, is thirteen inches in diameter at the butt, and 110 feet long—the top being cut off where it is four inches thick. It is almost perfectly straight and clear of knots. The timber of this pine is very valuable for building, is used here, to a great extent for piles, in building over the water.

California Raspberries.—The specimen herewith sent was procured from Humbolt Bay, about 200 miles up the coast, north of San Francisco. It will be perceived that the fruit resembles the common Antwerp of our gardens, and the color of the berries is yellow and red, corresponding to the colors of the garden fruit. There is little difference between these and the garden berries, except in size, and in this there is quite a contrast. The bush, or *tree* as it might be called, is also remarkable. It is not uncommon to see it three or four inches in diameter, and growing 10 or 15 feet high—and this leads to the inevitable conclusion, that it must be of perennial growth. This fruit is abundant on the northern coast, and much of the inland upper country.

California Oats.—This grain differs from the American and English oats, as will appear by the specimen sent. It grows spontaneously in many parts of California, though it is by no means universally disseminated. Upon the Contra Costa, bordering the bay of San Francisco on the east, on much of the plains upon the sea coast far south, and in the valleys and extensive prairies lying upon the north of the bay, these oats abound. They grow more or less luxuriant, according to the richness of the soil, but generally very thick, covering the ground to the exclusion of almost all other vegetation. In passing up the bay and rivers, 40 or 50 miles in extent may be seen entirely covered with them—*one vast and unbroken field of oats.* And from Vallejo (Vallay-ho) where the capital of the State has been recently located, at the northern head of the bay, for a distance of perhaps 20 miles towards Sacramento, not a green thing, (not the smallest tree or bush) can be seen, except this rich and beautiful clothing of the hills and valleys, as far inland as the eye can discern. These oats in favorable situations, sometimes grow six or seven feet high. They afford immense quantities of feed for thousands of cattle and horses, that may at all times be seen on some parts of these fields, and a plentiful supply for wild game, such as Elk, Deer, Antelope, Hares, &c. that abound on the plains.

American Oats.—When these are cultivated in this country, they grow most luxuriantly, as a small specimen herewith sent shows. The two plants are not selected as singular and unusual productions. Large fields were this year harvested of the same character, and I have seen immense quantities of them, of which this is only a fair specimen. They thrash no oats in this country yet, but cut them before they are fully ripe, and press them into bales like hay, and sell them, as they do immense quantities of native oats, by the ton. It should be observed, that native oats grow much heavier, in general, when the ground is cultivated. American oats will grow from five to seven feet high—properly cultivated; whether they would fill well, I am not aware, though some of them seem to be tolerably heavy.

NOTE.—In the package sent, will be found a small branch of the white oak, with a ball attached, and also a stem from the Sycamore with the seed balls. These oak balls, being abundant on many of the trees, give them a very beautiful appearance, resembling oranges, or lemons, and about the same size. ☞ This branch of oak was cut from a fine tree in Sacramento city. The identical tree on which was hung, one night last spring, by the mob, a man who committed murder in the street. I took it from that tree because it was most convenient. It is a fine old tree, about three feet in diameter, standing, I think, in Seventh, between K. and L. streets.

NOTE.—Specimens of the timber and oats are deposited in the museum of the Society.

July, 1851. H. G. WARNER.

AGRICULTURAL STATISTICS OF NEW-YORK,

(From 7th United States Census,)

BY JOHN DELAFIELD, OAKLANDS, SENECA COUNTY.

B. P. JOHNSON, Esq., *Secretary, &c.*

Dear Sir—The seventh census of the United States, (1850,) does not give to the Agriculturist data for computing the ratio of increase or decrease of cultivated crops per acre. This defect is felt injuriously by observing and cautious farmers; they examine this public document with interest, as exhibiting the fluctuations of products in the aggregate and in detail; and in connection with the State census, enabling them to form better estimates of the supply and probable demand of objects demanding their care and labor.

It is one among many of the indications of the condition of our farmers, that documents of this character are sought and examined. In your official station you have doubtless witnessed this truth, and it is gratifying to observe in most counties of the State, the desire to possess every authorized publication purporting to give facts, or any matter leading to information and knowledge.

The Agricultural statistics of this State, procured with your accustomed care from the Department at Washington is before me, for which I thank you, and now offer a digest in a form which may be useful to the State Society and to our farming interests.

When examining this document, the first desire of the farmer is to ascertain the condition of his own county, and the adjoining counties; with a view, therefore, to exhibit the condition of each county of the State in a condensed form, the tables have been reconstructed, or so modified as to show the products of a county in one column. Guide numbers are affixed to the items and to the names of counties for greater facility of reference.

A table is also prepared showing the increase or decrease of the products of the State, since the year 1845. This table, in connection with the able paper of Mr. Randal, at page 380 of the Society's Transactions for 1845, gives a comparative view of State agricultural products, for a period of ten years.

AGRICULTURAL PRODUCTIONS

Of each county of the State of New-York, compiled from the seventh census of the United States, 1850.

	PRODUCTIONS, &c.	1. Albany.	2. Alleghany.	3. Broome.	4. Cattaraugus.	5. Cayuga.	6. Chautauque.
1	Improved acres, ...	228,505	191,969	158,392	206,850	298,633	310,733
2	Unimproved acres, ...	68,877	186,320	131,070	261,859	99,863	281,581
3	Cash value of farms, ...	11,339,756	5,540,150	5,586,307	6,216,993	15,086,322	10,836,732
4	Value of imple'ts & machin'y,	470,878	361,897	197,036	359,333	541,770	374,653
5	Horses, ...	8,587	7,054	4,232	7,387	12,503	10,281
6	Asses and mules, ...	4	33	5	3	9	2
7	Milch cows, ...	12,155	14,926	12,131	19,949	18,113	32,382
8	Working oxen, ...	2,496	3,099	3,772	4,843	3,428	6,055
9	Other cattle, ...	7,723	19,682	11,145	26,560	19,905	34,083
10	Sheep, ...	37,558	103,219	30,650	71,638	122,446	137,453
11	Swine, ...	25,285	11,453	8,393	12,585	28,769	17,663
12	Value of live stock, ...	1,171,553	1,294,858	852,565	1,339,081	1,861,844	2,114,932
13	Wheat, bushels, ...	18,471	183,631	60,201	104,715	468,730	185,734
14	Rye, bushels, ...	251,252	3,100	39,953	849	29,695	2,120
15	Indian corn, bushels, ...	244,411	133,700	159,606	183,978	704,954	513,827
16	Oats, bushels, ...	648,389	504,466	409,390	722,389	735,441	614,392
17	Barley, bushels, ...	80,793	23,152	1,924	12,246	303,953	24,207
18	Buckwheat, bushels, ...	212,977	39,882	63,321	23,732	46,784	10,287
19	Hay, tons, ...	71,804	73,212	52,637	79,526	72,590	125,947
20	Tobacco, lbs., ...	....	....	20	....	....	....
21	Wool, lbs., ...	99,295	270,212	77,296	176,796	367,085	369,997

22	Peas and beans, bushels,	22,320	29,552	1,810	17,303	5,691	11,311
23	Potatoes, bushels,	406,040	258,870	190,262	350,873	281,692	319,026
24	Sweet potatoes, bushels,	2,229	80	....	....	27	25
25	Value of orchard products,	35,824	44,436	5,557	23,747	60,937	26,616
26	Wine, gallons,	118	1,037	....	6	....	190
27	Value of garden products,	59,084	11,792	100	10,986	4,454	1,500
28	Butter, lbs.,	970,142	1,141,162	1,197,882	1,522,649	1,673,315	2,706,612
29	Cheese, lbs.,	58,804	1,145,391	42,007	1,382,963	217,413	2,271,890
30	Hops, lbs.,	123	218	38,787	40	1,442	5,735
31	Clover seed, bushels,	603	281	52	55	2,545	114
32	Other grass seeds,	1,458	3,019	386	2,376	1,678	1,889
33	Dew rotted hemp, tons,	....	....	....	....	....	....
34	Water rotted hemp, tons,	....	....	....	....	....	....
35	Flax, lbs.,	7,203	7,861	3,109	9,839	10,761	15,177
36	Flax seed, bushels,	753	883	103	435	1,324	1,333
37	Silk cocoons, lbs.,	54	....	....	....	....	511
38	Maple sugar, lbs.,	13,032	585,550	113,026	788,631	109,048	787,408
39	Molasses, gallons,	490	3,458	330	991	410	581
40	Beeswax and honey, lbs.,	35,851	41,048	14,756	50,332	34,678	36,170
41	Value of home-made m'nfct's,	22,112	64,924	17,947	48,455	23,117	45,962
42	Value of animals slaughter'd,	239,176	154,113	123,146	158,089	350,676	275,298

AGRICULTURAL PRODUCTIONS—(Continued.)

	PRODUCTIONS, &c.	7. Chemung.	8. Chenango.	9. Clinton.	10. Columbia.	11. Cortland.	12. Delaware.
1	Improved acres, ...	124,715	332,909	133,578	297,483	165,447	352,941
2	Unimproved acres, ...	108,557	169,082	102,504	62,066	95,312	291,963
3	Cash value of farms, ...	6,352,356	9,555,847	4,256,119	15,684,468	5,405,547	8,583,684
4	Valueof imple'ts & machin'y,	251,873	436,606	198,170	492,516	351,481	439,623
5	Horses, ...	4,865	8,757	5,717	7,901	5,721	8,231
6	Asses and mules, ...	4	4	4	10	7	....
7	Milch cows, ...	10,016	30,873	5,816	13,538	20,020	34,493
8	Working oxen, ...	2,278	5,223	1,475	3,921	2,610	6,351
9	Other cattle, ...	7,552	22,002	7,594	10,336	14,052	22,611
10	Sheep, ...	22,597	88,811	31,725	103,532	38,660	65,196
11	Swine, ...	12,051	16,282	9,179	38,278	10,211	17,302
12	Value of live stock, ...	780,399	1,831,980	772,259	1,507,279	1,227,235	1,948,026
13	Wheat, bushels of, ...	223,340	51,479	75,415	17,839	45,662	20,295
14	Rye, "	2,559	49,280	19,351	526,450	11,110	139,505
15	Indian corn, "	166,804	278,113	129,782	560,079	201,988	119,334
16	Oats, "	368,450	669,866	254,654	972,015	425,180	591,571
17	Barley, "	28,602	28,668	6,033	14,653	58,002	3,339
18	Buckwheat, "	57,222	43,473	48,097	148,241	31,961	147,541
19	Hay, tons of, ...	40,106	124,453	36,583	74,478	73,871	120,964
20	Tobacco, lbs. of, ...	....	....	....	....	....	....
21	Wool, lbs., ...	70,953	266,026	144,190	278,772	119,060	165,221
22	Peas and beans, bushels of, .	2,288	4,084	23,487	2,287	8,518	2,946

23	Potatoes, bushels, ...	108,051	280,817	352,137	409,472	186,629	373,317
24	Sweet potatoes, bushels,....	16	20	....	25	....	....
25	Value of orchard products,.	6,365	19,081	6,355	15,970	21,168	24,613
26	Wine, gallons,...........	....	....	64	411	20	....
27	Value of garden products,..	2,337	195	36,731	9,177	508	1,884
28	Butter, lbs.,..............	829,421	3,069,421	609,047	1,571,984	1,989,208	3,780,585
29	Cheese, lbs., ...	34,829	1,069,331	124,450	132,803	1,071,690	89,038
30	Hops, lbs.,..............	50	26,674	708	425	10,327	5,538
31	Clover seed, bushels, ...	348	192	20	6	866	33,735
32	Other seeds, bushels, ...	981	1,390	621	322	1,585	2,300
33	Dew rotted hemp, tons, ...	....	....	....	....	....	1
34	Water rotted hemp, tons,...	....	....	....	....	....	....
35	Flax, lbs., ...	1,042	12,606	615	2,950	42,916	1,508
36	Flax seed, bushels,........	20	461	18	169	1,978	195
37	Silk cocoons, lbs.,.........	....	200	....	12	22	....
38	Maple sugar, lbs.,.........	34,123	547,382	147,643	840	521,053	469,517
39	Molasses, gallons,.........	682	1,106	830	32	2,946	663
40	Beeswax and honey, lbs.,...	31,746	29,666	28,458	39,420	24,360	82,469
41	Value of home-made mnfact's	11,120	30,798	36,978	17,054	21,173	46,671
42	Value of animals slaught'ed,	126,253	210,117	127,902	235,496	150,562	199,248

AGRICULTURAL PRODUCTIONS—Continued.

	PRODUCTIONS, &c.	13. Dutchess.	14. Erie.	15. Essex.	16. Franklin.	17. Fulton.	18. Genesee.
1	Improved acres, ...	378,506	270,874	166,951	103,203	117,413	203,871
2	Unimproved acres, ...	96,620	191,832	136,610	64,146	47,122	69,708
3	Cash value of farms, ...	25,181,302	12,441,745	3,393,385	2,298,912	3,465,299	10,505,382
4	Value of imple'ts & machin'y	658,895	515,303	182,446	159,578	199,085	433,480
5	Horses, ...	8,861	11,916	4,365	3,650	3,717	9,685
6	Asses and mules, ...	16	10	12	4	7	5
7	Milch cows,..............	18,023	25,172	6,747	6,974	7,416	8,908
8	Working oxen, ...	6,620	4,117	2,085	1,945	1,124	2,157
9	Other cattle, ...	18,129	17,893	8,808	8,876	5,803	10,857
10	Sheep, ...	96,330	66,318	50,206	27,436	13,484	116,829
11	Swine, ...	49,757	20,240	5,796	5,222	8,239	18,710
12	Value of live stock, ...	2,358,603	1,627,240	677,718	502,589	596,807	1,245,431
13	Wheat, bushels of, ...	69,760	242,221	66,510	71,883	9,750	734,051
14	Rye, "	321,102	36,879	18,463	7,218	45,333	7,566
15	Indian corn, "	782,605	443,160	120,425	87,100	130,361	390,428
16	Oats, "	1,066,117	740,270	189,954	150,850	285,202	310,282
17	Barley, "	6,863	70,820	505	3,495	24,883	42,254
18	Buckwheat, "	89,107	36,885	14,372	14,657	48,761	23,717
19	Hay, tons, ...	97,832	90,984	37,868	32,348	32,146	47,739
20	Tobacco, lbs., ...	65	....	....	100	....	....
21	Wool,..................	277,404	184,489	150,258	81,101	45,468	369,957
22	Peas and beans, ...	1,774	18,537	14,602	9,759	15,656	6,996

23	Potatoes, bushels,	385,941	375,161	307,549	164,714	160,974	181,364
24	Sweet potatoes, bushels,	10	88	....	50	....	....
25	Value of orchard products,	15,886	45,234	21,586	12,458	17,499	13,371
26	Wine, gallons,	47	121	....	....	....	63
27	Value of garden products,	6,339	18,950	2,937	50	....	11,137
28	Butter, lbs.,	1,760,086	1,544,201	428,199	582,452	710,648	887,510
29	Cheese, "	105,084	4,293,949	112,961	146,708	550,040	193,109
30	Hops, "	289	894	....	50,436	....	1,091
31	Clover seed, bushels,	50	2,250	100	55	112	713
32	Other grass seeds, bushels,	1,200	3,206	197	960	444	1,862
33	Dew rotted hemp, tons,	....	....	....	....	....	....
34	Water rotted hemp, "	....	....	....	....	....	1
35	Flax, lbs.,	7,182	6,553	285	1,291	10,621	1,553
36	Flax seed, bushels,	342	259	2	87	687	299
37	Silk cocoons, lbs.,	5	....	....	3	....	....
38	Maple sugar, "	1,799	307,001	60,554	252,279	43,240	192,399
39	Molasses, gallons,	20	1,697	6	1,605	1,495	2,801
40	Beeswax and honey, lbs.,	48,572	35,886	20,039	7,993	20,247	24,039
41	Value of home made mnfct's,	8,183	44,776	5,396	18,781	6,811	17,749
42	Value of animals slaughtered,	482,029	276,063	106,422	81,722	90,590	196,860

AGRICULTURAL PRODUCTIONS—(CONTINUED.)

	[illegible]	[illegible]	20. Hamilton.	21. Herkimer.	22. Jefferson.	23. Kings.	24. Lewis.
1	Improved acres,	[illegible]	11,815	245,649	418,540	17,419	137,822
2	Unimproved acres,	[illegible]	[illegible]	94,534	179,799	3,443	95,229
3	Cash value of farms,	[illegible]	[illegible]	16,494,344	18,986,823	4,130,700	5,289,486
4	Value of imple'ts & machin'y,	[illegible]	[illegible]	411,570	679,293	90,460	357,455
5	Horses,	[illegible]	[illegible]	[illegible]	15,406	3,034	4,307
6	Asses and mules,	6	....		1	127	2
7	Milch cows,	11,919	[illegible]	[illegible]	15,186	2,794	21,045
8	Working oxen,	2,993	[illegible]	[illegible]	4,496	85	2,648
9	Other cattle,	11,026	872	[illegible]	[illegible]	627	8,615
10	Sheep,	22,280	1,674	15,791	[illegible]	20	15,368
11	Swine,	16,514	316	15,073	[illegible]	5,366	9,041
12	Value of live stock,	1,000,540	58,870	1,387,348	2,515,100	[illegible]	972,928
13	Wheat, bushels,	10,883	233	43,223	276,137	[illegible]	73,584
14	Rye, "	122,646	748	28,719	71,370	[illegible]	9,957
15	Indian corn, "	189,325	5,434	209,292	367,731	[illegible]	83,027
16	Oats,	354,458	10,210	591,237	430,363	29,538	188,558
17	Barley,	6,589	118	68,894	227,416	230	23,813
18	Buckwheat,	118,490	3,884	35,395	15,182	1,966	10,117
19	Hay, tons,	72,271	4,004	95,520	131,949	6,804	67,280
20	Tobacco lbs.,	....	....	....	....	....	958
21	Wool, lbs.,	49,923	5,486	44,180	192,168	....	44,137
22	Peas and beans, lbs.,	2,203	106	23,338	76,244	17,085	14,817

23	Potatoes, bushels,	219,678	23,310	273,227	77,417	208,452	287,707
24	Sweet potatoes, bushels,	30	....	....	....	....	10
25	Value of orchard products,	21,150	889	47,025	43,227	1,798	13,116
26	Wine, gallons,	....	....	....	54	....	75
27	Value of garden products,	19,150	5	25	2,056	88,080	....
28	Butter, lbs.,	1,236,777	66,930	1,397,921	3,584,376	635	1,655,245
29	Cheese, "	40,462	2,928	....	9,548,009	....	3,067,300
30	Hops, "	13	....	163,408	....	....	11,322
31	Clover seed, bushels,	2	....	1,735	31	655	19
32	Other grass seeds, bushels,	342	68	1,504	6,127	....	2,420
33	Dew rotted hemp, tons,	....	....	....	....	....	....
34	Water, rotted hemp, "	....	....	....	....	....	....
35	Flax, lbs.,	634	40	63,246	2,954	....	31,905
36	Flax seed, bushels,	55	2	2,780	643	....	1,171
37	Silk cocoons, lbs.,	....	....	....	....	....	....
38	Maple sugar, "	68,946	14,683	105,361	818,394	....	436,378
39	Molasses, gallons,	1,929	....	3,440	1,705	....	1,393
40	Beeswax and honey,	70,331	2,376	36,566	26,186	....	17,968
41	Value of home made mnfact's,	8,525	6,969	16,417	80,110	....	15,971
42	Value of animals slaughter'd,	172,133	7,890	165,505	323,360	31,212	100,768

AGRICULTURAL PRODUCTIONS

Of each county of the State of New-York, compiled from the seventh census of the United States, 1850.

	PRODUCTIONS, &c.	1. Albany.	2. Alleghany.	3. Broome.	4. Cattaraugus.	5. Cayuga.	6. Chautauque.
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5	Horses,	8,587	7,054	4,232	7,387	12,503	10,281
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7	Milch cows,	12,155	14,926	12,131	19,949	18,113	32;382
8	Working oxen,	2,496	3,099	3,772	4,843	3,428	6,055
9	Other cattle,	7,723	19,682	11,145	26,560	19,905	34,083
10	Sheep,	37,558	103,219	30,650	71,638	122,446	137,453
11	Swine,	25,285	11,453	8,393	12,585	28,769	17,663
12	Value of live stock,	1,171,553	1,294,858	852,565	1,339,081	1,861,844	2,114,932
13	Wheat, bushels,	18,471	183,631	60,201	104,715	468,730	185,734
14	Rye, bushels,	251,252	3,100	39,953	849	29,695	2,120
15	Indian corn, bushels,	244,411	133,700	159,606	183,978	704,954	513,827
16	Oats, bushels,	648,389	504,466	409,390	722,389	735,441	614,392
17	Barley, bushels,	80,793	23,152	1,924	12,246	303,953	24,207
18	Buckwheat, bushels,	212,977	39,882	63,321	23,732	46,784	10,287
19	Hay, tons,	71,804	73,212	52,637	79,526	72,590	125,947
20	Tobacco, lbs.,	....	....	20	....	....	....
21	Wool, lbs.,	99,295	270,212	77,296	176,796	367,085	369,997

22	Peas and beans, bushels, ...	22,320	29,552	1,810	17,303	5,691	11,311
23	Potatoes, bushels, ...	406,040	258,870	190,262	350,873	281,692	319,026
24	Sweet potatoes, bushels, ...	2,229	80	....	....	27	25
25	Value of orchard products, .	35,824	44,436	5,557	23,747	60,937	26,616
26	Wine, gallons, ...	118	1,037	....	6	....	190
27	Value of garden products, ..	59,084	11,792	100	10,986	4,454	1,500
28	Butter, lbs., ...	970,142	1,141,162	1,197,882	1,522,649	1,673,315	2,706,612
29	Cheese, lbs., ...	58,804	1,145,391	42,007	1,382,963	217,413	2,271,890
30	Hops, lbs., ...	123	218	38,787	40	1,442	5,735
31	Clover seed, bushels, ...	603	281	52	55	2,545	114
32	Other grass seeds, ...	1,458	3,019	386	2,376	1,678	1,889
33	Dew rotted hemp, tons, ...	....	....	....	....	....	....
34	Water rotted hemp, tons, ..	....	....	....	....	....	....
35	Flax, lbs., ...	7,203	7,861	3,109	9,839	10,761	15,177
36	Flax seed, bushels, ...	753	883	103	435	1,324	1,333
37	Silk cocoons, lbs., ...	54	....	....	....	....	511
38	Maple sugar, lbs., ...	13,032	585,550	113,026	788,631	109,048	787,408
39	Molasses, gallons, ...	490	3,458	330	991	410	581
40	Beeswax and honey, lbs., ...	35,851	41,048	14,756	50,332	34,678	36,170
41	Value of home-made m'nfct's,	22,112	64,924	17,947	48,455	23,117	45,962
42	Value of animals slaughter'd,	239,176	154,113	123,146	158,089	350,676	275,298

AGRICULTURAL PRODUCTIONS—(Continued.)

	PRODUCTIONS, &c.	7. Chemung.	8. Chenango.	9. Clinton.	10. Columbia.	11. Cortland.	12. Delaware.
1	Improved acres, ...	124,715	332,909	133,578	297,483	165,447	352,941
2	Unimproved acres, ...	108,557	169,082	102,504	62,066	95,312	291,963
3	Cash value of farms, ...	6,352,356	9,555,847	4,256,119	15,684,468	5,405,547	8,583,684
4	Valueof imple'ts & machin'y,	251,873	436,606	198,170	492,516	351,481	439,623
5	Horses, ...	4,865	8,757	5,717	7,901	5,721	8,231
6	Asses and mules, ...	4	4	4	10	7	....
7	Milch cows, ...	10,016	30,873	5,816	13,538	20,020	34,493
8	Working oxen, ...	2,278	5,223	1,475	3,921	2,610	6,351
9	Other cattle, ...	7,552	22,002	7,594	10,336	14,052	22,611
10	Sheep, ...	22,597	88,811	31,725	103,532	38,660	65,196
11	Swine, ...	12,051	16,282	9,179	38,278	10,211	17,302
12	Value of live stock, ...	780,399	1,831,980	772,259	1,507,279	1,227,235	1,948,026
13	Wheat, bushels of, ...	223,340	51,479	75,415	17,839	45,662	20,295
14	Rye, "	2,559	49,280	19,351	526,450	11,110	139,505
15	Indian corn, "	166,804	278,113	129,782	560,079	201,988	119,334
16	Oats, "	368,450	669,866	254,654	972,015	425,180	591,571
17	Barley, "	28,602	28,668	6,033	14,653	58,002	3,339
18	Buckwheat, "	57,222	43,473	48,097	148,241	31,961	147,541
19	Hay, tons of, ...	40,106	124,453	36,583	74,478	73,871	120,964
20	Tobacco, lbs. of, ...	....	....	....	....	....	....
21	Wool, lbs., ...	70,953	266,026	144,190	278,772	119,060	165,221
22	Peas and beans, bushels of, .	2,288	4,084	23,487	2,287	8,518	2,946

23	Potatoes, bushels,	108,051	280,817	352,137	409,472	186,629	373,317
24	Sweet potatoes, bushels,	16	20	....	25	....	....
25	Value of orchard products,	6,365	19,081	6,355	15,970	21,168	24,613
26	Wine, gallons,	....	....	64	411	20	....
27	Value of garden products,	2,337	195	36,731	9,177	508	1,884
28	Butter, lbs.,	829,421	3,069,421	609,047	1,571,984	1,989,208	3,780,585
29	Cheese, lbs.,	34,829	1,069,331	124,450	132,803	1,071,690	89,038
30	Hops, lbs.,	50	26,674	708	425	10,327	5,538
31	Clover seed, bushels,	348	192	20	6	866	33,735
32	Other seeds, bushels,	981	1,390	621	322	1,585	2,300
33	Dew rotted hemp, tons,	....	....	....	....	....	1
34	Water rotted hemp, tons,	....	....	....	....	....	....
35	Flax, lbs.,	1,042	12,606	615	2,950	42,916	1,508
36	Flax seed, bushels,	20	461	18	169	1,978	195
37	Silk cocoons, lbs.,	....	200	....	12	22	....
38	Maple sugar, lbs.,	34,123	547,382	147,643	840	521,053	469,517
39	Molasses, gallons,	682	1,106	830	32	2,946	663
40	Beeswax and honey, lbs.,	31,746	29,666	28,458	39,420	24,360	82,469
41	Value of home-made mnfact's	11,120	30,798	36,978	17,054	21,173	46,671
42	Value of animals slaught'ed,	126,253	210,117	127,902	235,496	150,562	199,248

AGRICULTURAL PRODUCTIONS—Continued.

	PRODUCTIONS, &c.	13. Dutchess.	14. Erie.	15. Essex.	16. Franklin.	17. Fulton.	18. Genesee.
1	Improved acres,	378,506	270,874	166,951	103,203	117,413	203,871
2	Unimproved acres,	96,620	191,832	136,610	64,146	47,122	69,708
3	Cash value of farms,	25,181,302	12,441,745	3,393,385	2,298,912	3,465,299	10,505,382
4	Value of imple'ts & machin'y	658,895	515,303	182,446	159,578	199,085	433,480
5	Horses,	8,861	11,916	4,365	3,650	3,717	9,885
6	Asses and mules,	16	10	12	4	7	5
7	Milch cows,	18,023	25,172	6,747	6,974	7,416	8,908
8	Working oxen,	6,620	4,117	2,085	1,945	1,124	2,157
9	Other cattle,	18,129	17,893	8,808	8,876	5,803	10,857
10	Sheep,	96,330	66,318	50,206	27,436	13,484	116,829
11	Swine,	49,757	29,240	5,796	5,222	8,239	18,710
12	Value of live stock,	2,358,603	1,627,240	677,718	502,589	596,807	1,245,431
13	Wheat, bushels of,	69,760	242,221	66,510	71,883	9,750	734,051
14	Rye, "	321,102	36,879	18,463	7,218	45,333	7,566
15	Indian corn, "	782,605	443,160	120,425	87,100	130,361	390,428
16	Oats, "	1,066,117	740,270	189,954	150,850	285,202	310,282
17	Barley, "	6,863	70,820	505	3,495	24,883	42,254
18	Buckwheat, "	89,107	36,885	14,372	14,657	48,761	23,717
19	Hay, tons,	97,832	90,984	37,868	32,348	32,146	47,739
20	Tobacco, lbs.,	65	....	....	100	....	....
21	Wool,	277,404	184,489	150,258	81,101	45,468	369,957
22	Peas and beans,	1,774	18,537	14,602	9,759	15,656	6,996

23	Potatoes, bushels,	385,941	375,161	307,549	164,714	160,974	181,364
24	Sweet potatoes, bushels,	10	88	....	50	....	....
25	Value of orchard products,	15,886	45,234	21,586	12,458	17,499	13,371
26	Wine, gallons,	47	121	....	....	....	63
27	Value of garden products,	6,339	18,950	2,937	50	....	11,137
28	Butter, lbs.,	1,760,086	1,544,201	428,199	582,452	710,648	887,510
29	Cheese, "	105,084	4,293,949	112,961	146,708	550,040	193,109
30	Hops, "	289	894	....	50,436	....	1,091
31	Clover seed, bushels,	50	2,250	100	55	112	713
32	Other grass seeds, bushels,	1,200	3,206	197	960	444	1,862
33	Dew rotted hemp, tons,	....	....	....	....	....	....
34	Water rotted hemp, "	....	....	....	....	....	1
35	Flax, lbs.,	7,182	6,553	285	1,291	10,621	1,553
36	Flax seed, bushels,	342	259	2	87	687	299
37	Silk cocoons, lbs.,	5	....	....	3	....	....
38	Maple sugar, "	1,799	307,001	60,554	252,279	43,240	192,399
39	Molasses, gallons,	20	1,697	6	1,605	1,495	2,801
40	Beeswax and honey, lbs.,	48,572	35,886	20,039	7,993	20,247	24,039
41	Value of home made mnfct's,	8,183	44,776	5,396	18,781	6,811	17,749
42	Value of animals slaughtered,	482,029	276,063	106,422	81,722	90,590	196,860

AGRICULTURAL PRODUCTIONS—(CONTINUED.)

	PRODUCTIONS, &c.	19. Greene.	20. Hamilton.	21. Herkimer.	22. Jefferson.	23. Kings.	24. Lewis.
1	Improved acres, ...	207,523	13,845	245,649	418,540	17,419	137,822
2	Unimproved acres, ...	106,895	23,687	94,534	179,799	3,443	95,229
3	Cash value of farms,.......	7,943,072	220,771	10,494,344	13,986,823	4,130,700	5,289,486
4	Value of imple'ts & machin'y,	344,550	14,614	411,570	679,293	90,460	357,455
5	Horses, ...	5,844	289	7,650	15,406	3,034	4,307
6	Asses and mules, ...	6	....	....	1	127	2
7	Milch cows,..............	11,919	780	35,978	45,186	2,794	21,045
8	Working oxen, ...	2,993	385	1,071	3,436	85	2,648
9	Other cattle, ...	11,026	872	10,982	29,370	627	8,615
10	Sheep, ...	22,280	1,674	15,794	60,330	20	15,368
11	Swine, ...	16,514	316	15,073	27,873	5,366	9,041
12	Value of live stock, ...	1,000,540	58,870	1,387,348	2,515,100	317,672	972,928
13	Wheat, bushels,..........	10,883	233	43,223	276,137	29,926	73,584
14	Rye, "	122,646	748	28,719	71,370	5,662	9,957
15	Indian corn, "	189,325	5,434	209,292	367,731	91,949	83,027
16	Oats,....................	354,458	10,210	591,237	430,363	29,538	188,558
17	Barley,..................	6,589	118	68,894	227,416	230	23,813
18	Buckwheat,..............	118,490	8,884	35,395	15,182	1,966	10,117
19	Hay, tons,...............	72,271	4,004	95,520	131,949	6,804	67,280
20	Tobacco lbs., ...	....	....	....	......	....	958
21	Wool, lbs.,...............	49,923	5,486	44,180	192,168	....	44,137
22	Peas and beans, lbs., ...	2,203	106	23,338	76,244	17,085	14,817

23	Potatoes, bushels,.........	219,678	23,310	273,227	77,417	208,452	287,707
24	Sweet potatoes, bushels,....	30	....	....	....	....	10
25	Value of orchard products,.	21,150	889	47,025	43,227	1,798	13,116
26	Wine, gallons,............	....	....	....	54	....	75
27	Value of garden products,..	19,150	5	25	2,056	88,080	....
28	Butter, lbs.,..............	1,236,777	66,930	1,397,921	3,584,376	635	1,655,245
29	Cheese, "	40,462	2,928	....	9,548,009	....	3,067,300
30	Hops, "	13	....	163,408	....	....	11,322
31	Clover seed, bushels, ...	2	....	1,735	31	655	19
32	Other grass seeds, bushels, .	342	68	1,504	6,127	....	2,420
33	Dew rotted hemp, tons,....	....	....	....	....	....	....
34	Water, rotted hemp, "	....	....	....	....	....	....
35	Flax, lbs.,................	634	40	63,246	2,954	....	31,905
36	Flax seed, bushels,........	55	2	2,780	643	....	1,171
37	Silk cocoons, lbs.,.........	....	....	....	....	....	....
38	Maple sugar, "	68,946	14,683	105,361	818,394	....	436,378
39	Molasses, gallons,.........	1,929	....	3,440	1,705	....	1,393
40	Beeswax and honey,.......	70,331	2,376	36,566	26,186	....	17,968
41	Value of home made mnfact's,	8,525	6,969	16,417	80,110	....	15,971
42	Value of animals slaughter'd,	172,133	7,890	165,505	323,360	31,212	100,768

AGRICULTURAL PRODUCTIONS—(Continued.)

	PRODUCTIONS, &c.	25. Livingston.	26. Madison.	27. Monroe.	28. Montgomery.	29. New-York.	30. Niagara.
1	Improved acres,	229,762	363,392	302,102	192,260	2,428	178,664
2	Unimproved acres,	86,938	93,203	84,394	46,868	245	102,128
3	Cash value of farms,	14,018,838	10 829,523	19,617,346	8,680,704	4,937,000	6,700,836
4	Value of imple'ts & machin'y,	360,978	388,555	782,833	367,092	39,131	409,995
5	Horses,	9,934	9,900	13,576	7,202	7,773	9,510
6	Asses and mules,	23	4	1	4	6	....
7	Milch cows,	9,083	22,468	14,201	13,766	2,288	9,832
8	Working oxen,	2,526	2,841	3,230	1,399	38	2,713
9	Other cattle,	13,297	17,309	14,938	9,303	48	11,646
10	Sheep,	146,846	95,308	112,297	13,379	11	59,093
11	Swine,	18,825	16,527	31,207	13,128	3,802	20,504
12	Value of live stock,	1,313,792	1,701,463	1,845,236	1,074,253	808,857	1,088,304
13	Wheat, bushels,	1,111,986	113,257	1,441,653	49,421	115	917,738
14	Rye, "	7,369	26,962	8,148	128,634	75	1,478
15	Indian corn, "	366,557	339,906	767,021	219,648	4,698	345,257
16	Oats, "	323,798	585,307	449,150	938,097	325	821,288
17	Barley, "	122,271	295,067	106,049	125,204	....	76,510
18	Buck-wheat, "	21,846	18,533	26,306	128,127	....	20,069
19	Hay, tons,	44,274	93,565	62,602	50,063	948	35,724
20	Tobacco, lbs.,	....	7,970	....	....	....	....
21	Wool, lbs.,	410,447	194,292	365,084	68,025	....	168,330
22	Peas and beans, bushels,	6,296	20,029	8,215	47,087	78	13,823

23	Potatoes, bushels,..........	181,474	268,786	561,425	189,825	13,321	162,082
24	Sweet potatoes, bushels,....	....	....	320	....	....	....
25	Value of orchard products, .	19,989	37,792	67,192	30,087	4,435	32,349
26	Wine, gallons,............	857	....	667	228	....	15
27	Value of garden products,..	880	1,157	35,262	1,461	121,535	4,786
28	Butter, pounds,...........	834,138	1,584,499	1,258,735	1,005,685	3,195	793,206
29	Cheese "	162,444	2,450,172	286,653	1,668,700	....	69,270
30	Hops "	7,018	529,070	58,023	34,955	....	20
31	Clover seed, bushels, ...	2,088	164	3,099	1,905	....	3,563
32	Other grass seeds, bushels,..	1,174	1,906	1,687	2,680	....	1,516
33	Dew rotted hemp, tons, ...	....	....	....	....	....	....
34	Water rotted hemp, tons,...	....	....	....	....	....	....
35	Flax, lbs.,............ ...	1,786	4,421	1,457	20,034	....	435
36	Flax seed, bushels,........	225	544	76	4,030	....	317
37	Silk cocoons, lbs.,.........	3	87	5	....	....	1
38	Maple sugar, "	47,556	125,480	37,468	45,196	....	13,258
39	Molasses, gallons,.........	455	1,822	592	1,095	....	145
40	Bees-wax and honey, lbs.,..	26,956	27,846	17,335	33,660	250	13,035
41	Value of animals slaughter'd.	14,158	25,013	15,764	17,841	....	25,234
42	Value of home manufactures,	191,201	223,187	347,236	150,374	1,618,753	180,145

AGRICULTURAL PRODUCTIONS—(CONTINUED.)

	PRODUCTIONS, &c.	31. Oneida.	32. Onondaga.	33. Ontario.	34. Orange.	35. Orleans.	36. Oswego.
1	Improved acres, ...	476,669	317,280	274,381	315,795	163,823	193,220
2	Unimproved acres, ...	189,572	113,291	90,996	107,903	53,631	170,060
3	Cash value of farms, ...	15,930,355	17,055,334	15,066,953	17,585,393	8,946,810	8,037,526
4	Value of imple'ts & machin'y,	527,350	804,010	566,473	451,823	338,405	423,515
5	Horses, ...	14,683	13,987	10,313	8,262	7,530	8,750
6	Asses and mules, ...	12	....	6	15	....	10
7	Milch cows, ...	47,959	21,203	11,253	38,938	7,026	21,112
8	Working oxen, ...	4,112	3,150	3,188	12,376	2,055	3,512
9	Other cattle, ...	24,482	22,008	13,760	13,197	7,717	16,368
10	Sheep, ...	70,341	112,990	149,544	23,562	58,791	35,370
11	Swine, ...	26,793	31,018	20,147	42.051	11,135	16,621
12	Value of live stock, ...	2.620,199	2,086,058	1,529,572	1,953,092	925,324	1,196,493
13	Wheat, bushels, ...	76,805	427,535	929,342	46,527	854,676	41,739
14	Rye, "	21,199	45,095	7,784	292,926	3	33,489
15	Indian corn, "	645,359	782,220	520,917	491,074	421,126	396,605
16	Oats, "	834,728	891,331	421,666	390,834	190,078	337,714
17	Barley, "	141,939	440,293	170,300	1,495	28,958	16,769
18	Buckwheat, "	53,452	33,673	21,513	90,749	20,101	37,620
19	Hay, tons, ...	167,047	82,004	62,478	96,593	26,875	60,930
20	Tobacco, lbs., ...	....	73,731	100	75	....	....
21	Wool, lbs., ...	283,122	345,880	462,955	47,438	199,228	102,968
22	Peas and beans, bushels, ...	15,034	24,081	8,404	842	3,836	10,424

23	Potatoes, bushels,	539,985	437,566	231,684	146,331	141,157	320,166
24	Sweet potatoes, bushels,	270	....	....	10	....	19
25	Value of orchard products,	88,322	66,635	49,382	15,921	33,531	70,605
26	Wine, gallons,	921	182	105	908	14	15
27	Value of garden products,	11,092	15,577	7,973	3,797	601	2,669
28	Butter, lbs.,	3,963,392	2,147,518	1,047,782	3,769,034	704,881	2,031,574
29	Cheese "	5,218,734	1,004,878	255,284	620	105,578	1,340,545
30	Hops "	294,944	5,523	16,171	36	....	8,761
31	Clover seeds, bushels,	166	2,442	3,161	118	1,476	158
32	Other grass seeds, bushels,	9,924	1,198	1,247	1,027	1,165	1,106
33	Dew rotted hemp, tons,	....	....	....	....	....	....
34	Water rotted hemp "	....	....	....	2	....	....
35	Flax, lbs.,	1,684	20,064	595	996	451	5,960
36	Flax seed, bushels,	24	1,703	266	39	153	324
37	Silk cocoons, lbs.,	....	60	....	....	50	60
38	Maple sugar "	177,351	128,785	128,599	1,681	34,460	197,825
39	Molasses, gallons,	2,792	582	925	....	1,140	1,774
40	Bees-wax and honey, lbs.,	31,586	39,766	30,330	35,232	12,745	35,629
41	Value of home manufact'rs,	37,696	24,430	13,013	3,901	13,234	50,132
42	Value of animals slaughter'd,	498,290	474,235	334,664	372,042	140,889	238,458

AGRICULTURAL PRODUCTIONS.—(Continued.)

	PRODUCTIONS, &c.	37. Otsego.	38. Putnam.	39. Queens.	40. Rensselaer.	41. Richmond.	42. Rockland.
1	Improved acres, ...	376,868	85,501	123,360	274,543	10,311	43,080
2	Unimproved acres, ...	171,294	35,344	46,286	75,203	4,863	34,323
3	Cash value of farms, ...	12,560,142	4,820,700	12,373,722	13,566,420	1,620,360	3 269,780
4	Value of imple'ts & machin'y,	597,863	141,774	424,541	539,570	46,480	67,952
5	Horses, ...	12,240	1,598	5,846	8,504	439	1,546
6	Asses and mules, ...	....	3	97	....,......	13	139
7	Milch cows, ...	29,958	6,990	7,789	16,174	747	2,938
8	Working oxen, ...	3,431	1,920	1,708	3,265	371	495
9	Other cattle, ...	24,959	4,131	4,255	9,944	632	1,132
10	Sheep, ...	108,244	4,503	12,474	85,578	71	999
11	Swine, ...	26,184	10,304	18,160	27,739	1,327	3,010
12	Value of live stock, ...	2,148,130	536,623	851,576	1,524,503	81,215	239,309
13	Wheat, bushels, ...	76,652	3,869	124,494	14,562	15,388	6,439
14	Rye, "	86,661	31,070	64,951	238,126	5,192	34,216
15	Indian corn "	290,608	132,376	403,705	469,877	46,195	73,628
16	Gats, "	921,989	79,535	273,760	762,734	22,856	39,844
17	Barley, "	80,574	....	3,310	14,055	1,880	....
18	Buckwheat, "	105,353	34,063	58,605	98,814	2,052	31,842
19	Hay, tons, ...	113,209	25,140	48,027	84,642	5,642	11,712
20	Tobacco, lbs., ...	....	20	....	....	....	....
21	Wool, "	325,598	13,388	25,830	256,509	....	1,876
22	Beans and peas, bushels, ...	22,362	585	15,468	8,021	13	12

23	Potatoes, bushels,	500,372	99,821	307,551	602,595	28,871	46,570
24	Sweet potatoes, bushels,	30	....	10	....	1,411	....
25	Value of orchard products,	44,257	14,934	63,675	56,759	2,880	5,241
26	Wine, gallons,	1	83	136	228	75	78
27	Value of garden products,	220	274	308,957	11,928	14,412	6,669
28	Butter, lbs.,	2,497,871	785,330	561,230	1,336,281	34,792	23,283
29	Cheese "	2,049,673	7,863	2,697	688,856	....	....
30	Hops "	1,132,052	19	20	....	....	50
31	Clover seed, bushels,	2,846	....	111	3	....	3
32	Other grass seeds, bushels,	4,431	67	656	660	....	12
33	Dew rotted hemp, tons,	....	....	....	....	....	....
34	Water rotted hemp "	....	....	....	....	....	....
35	Flax, lbs.,	22,066	100	....	268,091	....	....
36	Flax seed, bushels,	1,475	6	....	11,061	....	10
37	Silk cocoons, lbs.,	5	....	....	....	....	....
38	Maple sugar "	384,996	1,925	....	30,180	....	....
39	Molasses, gallons,	2,990	225	....	63	....	....
40	Bees-wax and honey, lbs.,	45,472	10,975	5,299	42,702	....	5,025
41	Value of home made m'nfct's,	32,271	2,064	767	9,458	....	204
42	Value of animals slaughterd,	260,131	118,084	319,441	303,863	14,529	54,623

AGRICULTURAL PRODUCTIONS.—(CONTINUED.)

	PRODUCTIONS, &c.	43. St. Lawrence.	44. Saratoga.	45. Schenectady.	46. Schoharie.	47. Seneca.	48. Steuben.
1	Improved acres,	377,086	281,427	76,939	205,745	127,937	336,981
2	Unimproved acres,	262,627	131,562	28,892	105,444	39,541	338,415
3	Cash value of farms,	9,242,548	13,200,759	3,820,430	7,347,157	8,563,490	13,581,268
4	Value of imple'ts & machiny,	657,505	517,323	193,943	337,645	254,265	676,792
5	Horses,	13,811	9,624	3,225	6,995	5,754	12,744
6	Asses and mules,	....	18	2	....	....	4
7	Milch cows,	33,365	15,456	5,348	16,055	5,993	21,584
8	Working oxen,	6,555	3,040	801	2,284	983	6,744
9	Other cattle,	34,441	15,128	3,859	11,548	6,711	27,162
10	Sheep,	89,910	56,769	12,295	31,340	34,599	156,776
11	Swine,	18,423	28,198	5,560	17,820	11,201	23,939
12	Value of live stock,	2,144,176	289,956	470,110	1,242,071	737,558	2,155,090
13	Wheat, bushels,	289,956	21,907	12,695	63,241	527,697	653,484
14	Rye, "	26,764	257,916	76,386	178,565	3,823	16,033
15	Indian corn "	244,690	438,413	116,413	116,831	260,271	297,717
16	Oats, "	353,993	702,338	331,027	514,807	315,026	913,948
17	Barley, "	16,520	25,626	60,181	110,543	81,703	153,056
18	Buckwheat, "	19,227	109,900	66,618	161,027	18,976	115,390
19	Hay, tons,	122,688	67,538	24,269	52,759	29,763	111,869
20	Tobacco, lbs.,	100	....	....	50	....	....
21	Wool, "	287,900	158,736	31,407	95,185	123,358	399,543
22	Peas and beans,	56,319	8,533	6,904	32,872	1,069	45,202

23	Potatoes, bushels,	476,934	596,494	138,285	215,318	79,347	360,725
24	Sweet potatoes, bushels,	....	120	....	....	....	245
25	Value of orchard products,	29,955	33,439	14,563	32,827	26,990	30,565
26	Wine, gallons,	10	129	25	271	....	285
27	Value of garden products,	4,468	5,512	3,709	486	222	3,740
28	Butter, lbs.,	2,876,918	1,388,594	505,970	1,603,063	513,694	1,918,465
29	Cheese "	1,596,450	253,588	24,269	52,759	29,763	111,869
30	Hops "	101,855	4,324	25	10,587	19	424
31	Clover seed, bushels,	70	587	106	5,077	7,052	1,386
32	Other grass seed, bushels,	2,736	949	686	4,563	2,987	4,479
33	Dew rotted hemp, tons,	....	....	....	....	....	....
34	Water rotted hemp, "	....	....	....	....	....	....
35	Flax, lbs.,	3,045	6,621	32,120	10,497	367	16,241
36	Flax seed, bushels,	149	489	1,454	2,601	1,561	1,270
37	Silk cocoons, lbs.,	....	....	....	6	....	2
38	Maple sugar "	1,236,504	16,895	....	111,344	11,999	294,897
39	Molasses, gallons,	80	826	....	2,065	935	3,547
40	Bees-wax and honey, lbs.,	23,013	63,241	11,294	31,481	18,547	94,991
41	Value of home made m'nfct's,	82,812	20,721	1,971	26,093	3,904	76,287
42	Value of animals slaughter'd	284,571	320,118	78,484	187,472	17,042	296,798

AGRICULTURAL PRODUCTIONS—(CONTINUED.)

	PRODUCTIONS, &c.	49. Suffolk.	50. Sullivan.	51. Tioga.	52. Tompkins.	53. Ulster.	54. Warren.
1	Improved acres, ...	143,612	94,425	118,240	223,213	233,059	95,480
2	Unimproved acres,.........	210,292	141,830	103,111	104,284	207,938	126,359
3	Cash value of farms, ...	7,195,800	3 543,001	4,852,976	10,382,945	12,438,204	1,965,312
4	Value of imple'ts & machin'y	211,147	167,109	173,896	403,349	492,407	105,282
5	Horses, ...	5,675	2,631	3,863	8,923	8,551	2,724
6	Asses and mules, ...	214	45	....	7	36	....
7	Milch cows,...............	9,292	7,626	8,893	14,993	18,673	5,202
8	Working oxen, ...	1,770	3,408	2,373	2,739	4,877	1,682
9	Other cattle, ...	9,944	6,711	9,209	15,569	10,389	6,554
10	Sheep, ...	31,449	10,829	26,895	89,631	25,387	18,403
11	Swine, ...	14,545	6,455	8,111	14,535	36,292	5,264
12	Value of live stock,.......	894,957	656,948	644,357	1,409,914	1,188,947	418,557
13	Wheat, bushels,..........	128,237	1,720	121,891	421,302	27,489	7,990
14	Rye, "	49,771	92,845	10,873	25,878	305,688	22,888
15	Indian corn, "	377,985	94,529	145,171	340,612	333,057	95,410
16	Oats, "	243,020	110,456	286,061	686,257	827,899	76,750
17	Barley, "	15,014	102	6,053	81,689	394	....
18	Buckwheat, "	37,359	87,754	45,414	109,785	150,418	16,993
19	Hay, tons,...............	33,080	22,001	39,524	67,981	67,407	22,353
20	Tobacco, lbs., ...	....	....	....	....	....	....
21	Wool, "	77,350	28,832	60,044	242,004	68,322	52,247
22	Peas and beans, bushels, ...	3,342	510	2,686	5,225	647	940

23	Potatoes, bushels,	178,549	122,980	137,344	183,248	234,324	150,176
24	Sweet potatoes, bushels,	406				60	
25	Value of orchard products,	11,335	8,557	4,996	23,930	28,875	8,712
26	Wine, gallons,	112	5		100	5	300
27	Value of garden products,	2,608		32	455	472	400
28	Butter, lbs.,	459,293	732,691	856,140	1,635,789	1,211,650	464,175
29	Cheese, "	33,080	22,001	39,524	67,981	67,407	22,353
30	Hops, "	109	72		18	177	5
31	Clover seed, bushels,	41	13	259	2,202	284	42
32	Other grass seeds, do	1,255	1,225	362	1,859	1,115	34
33	Dew rotted hemp, tons,						
34	Water rotted hemp, "						
35	Flax, lbs.,	496	600	2,008	16,578	14,724	414
36	Flax seed, bushels,	20	19	103	2,355	1,705	22
37	Silk cocoons, lbs.,	107					
38	Maple sugar,		11,276	43,213	102,099	51,399	34,253
39	Molasses, gallons,		21	1,166	1,296	1,463	24
40	Beeswax and honey, lbs.,	3,454	28,061	10,225	73,003	55,846	19,230
41	Value of home made mnfact's,	5,677	10,546	13,158	20,942	21,689	10,330
42	Value of animals slaughter'd,	232,297	108,660	91,032	193,315	324,236	70,309

AGRICULTURAL PRODUCTIONS—(Continued.)

	PRODUCTIONS, &c.	55. Washington.	56. Wayne.	57. West Chester.	58. Wyoming.	59. Yates.	Aggregate amount of each item.
1	Improved acres,	299,802	233,603	196,701	223,533	133,971	12,408,968
2	Unimproved acres,	102,242	97,857	55,228	126,747	52,529	6,710,120
3	Cash value of farms,	11,958,955	11,837,903	19,552,743	8,071,848	7,578,553	554,546,642
4	Value of imple'ts & machin'y	513,796	572,695	416,047	394,640	196,180	22,084,926
5	Horses,	9,394	12,127	5,189	8,725	5,506	447,014
6	Asses and mules,	....	7	8	4	10	963
7	Milch cows,	16,652	14,037	17,572	15,022	6,482	931,324
8	Working oxen,	2,217	2,432	5,349	3,850	1,258	178,909
9	Other cattle,	18,388	16,309	5,674	18,211	7,370	767,406
10	Sheep,	152,337	81,279	11,001	133,116	62,297	3,453,241
11	Swine,	28,375	20,702	23,355	15,634	11,762	1,018,252
12	Value of live stock,	1,673,515	1,536,390	1,326,969	1,357,322	796,790	73,570,499
13	Wheat, bushels,	34,026	614,041	45,152	331,639	483,159	13,121,498
14	Rye, "	141,417	44,237	93,074	3,700	14,059	4,148,182
15	Indian corn, "	510,205	660,739	445,333	189,192	177,636	17,858,400
16	Oats, "	580,754	518,051	279,158	543,977	221,021	26,552,814
17	Barley, "	14,819	107,453	2,796	48,186	171,768	3,585,059
18	Buck wheat, "	40,401	27,486	87,616	27,878	22,911	3,183,955
19	Hay, tons,	89,752	54,034	79,646	75,067	31,673	3,728,797
20	Tobacco lbs.,	....	....	....	....	....	83,189
21	Wool, lbs.,	457,093	255,289	28,775	380,47[illegible]	201,291	10,071,301
22	Peas and beans, bushels,	12,182	4,191	1,479	20,477	1,733	741,636

23	Potatoes, bushels,	526,268	278,217	439,941	226,399	91,524	15,398,362
24	Sweet potatoes, do,	35	39	18	6	20	5,623
25	Value of orchard products,	65,159	84,451	67,587	21,575	21,531	1,761,950
26	Wine, gallons,	97	430	259	339	85	9,172
27	Value of garden products,	3,705	5,092	43,936	458	25	912,047
28	Butter, lbs.,	1,451,516	1,367,867	1,547,504	1,200,297	537,634	79,766 094
29	Cheese, "	89,752	173,930	1,070	1,007,359	98,866	49,741,413
30	Hops,	410	1,033	139	11,870	1,050	2,536,299
31	Clover seed, bushels,	14	2,791	397	410	1,648	88,222
32	Other grass seeds, do,	950	1,443	446	3,745	866	96,493
33	Dew rotted hemp, tons,	....	....	....	....	....	1
34	Water rotted hemp "	....	....	....	....	....	3
35	Flax, lbs.,	230,698	2,665	....	12,417	1,095	940,577
36	Flax seed, bushels,	9,247	467	....	1,265	982	57,963
37	Silk cocoons, lbs.,	55	194	....	26	306	1,774
38	Maple sugar, lbs.,	13,781	45,497	50	572,593	38,637	10,357,484
39	Molasses, gallons,	145	322	....	989	450	56,529
40	Beeswax and honey, lbs.,	52,231	29,948	6,528	37,571	24,526	1,756,190
41	Value of home made mnfact's,	9,870	31,287	8,555	29,029	6,283	1,280,333
42	Value of animals slaughter'd,	314,281	263,728	311,482	155,091	100,292	13,573,983

AGRICULTURAL PRODUCTIONS

Of the State of New-York as exhibited by the seventh census of the United States, 1850, *compared with the productions of* 1845, *as exhibited by the State census.*

	PRODUCTIONS.	1850.	1845.	Increase.	Decrease.
1	Improved acres,	12,408,968	11,737,567	671,692	....
2	Unimproved acres,	6,710,120	....	....	....
3	Cash value of farms,	554,546,642	....	....	....
4	Value of implements and machinery,	22,084,926	....	....	....
5	Horses,	447,014	505,155	....	58,141
6	Asses and mules,	963	....	....	....
7	Milch cows,	931,324	999,490	....	68,066
8	Working oxen,	178,909	1,072,840	....	126,525
9	Other cattle,	767,406			
10	Sheep,	3,453,241	6,443,865	....	2,990,624
11	Swine,	1,018,252	1,584,344	....	566,092
12	Value of live stock,	73,570,499	....	....	....
13	Wheat, bushels,	13,121,498	13,391,770	....	270,724
14	Rye, "	4,148,182	2,966,322	1,181,860	....
15	Indian corn, "	17,858,400	14,722,114	3,136,286	....
16	Oats, "	26,552,814	26,323,051	228,163	....
17	Barley, "	3,585,059	3,108,705	476,354	....
18	Buckwheat, "	3,183,955	3,634,679	....	450,724
19	Hay, tons,	3,728,797	3,703,000	26,795	....
20	Tobacco, lbs.,	83,189	....	....	....

21	Wool, lbs.,	10,071,301	13,864,828		3,793,527
22	Peas and beans, bushels of,	741,636	1,922,690		1,182,054
23	Potatoes, "	15,398,362	23,653,418		7,255,056
24	Sweet potatoes, "	5,628			
25	Value of orchard products,	1,761,950			
26	Wine, gallons of,	9,172			
27	Value of orchard products,	912,047			
28	Butter, lbs.,	79,766,094	70,501,733	264,361	
29	Cheese, "	49,741,413	36,747,976	12,991,437	
30	Hops, "	2,536,299			
31	Clover seed, bushels,	88,222			
32	Other grass seeds,	96,443			
33	Dew-rotted hemp, tons,	1			
34	Water-rotted hemp, "	3			
35	Flax, lbs.,	940,577	2,897,062		1,956,485
36	Flax seed, bushels,	57,963			
37	Silk cocoons, lbs.,	1,774			
38	Maple sugar, "	10,357,484			
39	Molasses, gallons,	56,529			
40	Bees wax and honey, lbs.,	1,756,190			
41	Value of home made manufactures,	1,280,333			
42	Value of animals slaughtered,	13,573,983			
43	Population,	3,098,819	2,604,495	494,323	

An examination of the foregoing tables calls attention to the following facts:

In the year 1840, the population of the State was 2,428,921. In 1845, it was 2,604,495—and in 1850 it was 3,098,818, showing an increase of ten years at 27.7-100 per cent.

The area of the State comprises 46,085 square miles, or 29,494,400 acres. Of this area, 19,119,088 acres were visited and reported by the Marshals, under the requirements of the acts for taking the late census—thus leaving 10,375,312 acres, or about one-third of the State without examination or report. Another feature of the surface of the State is, the increase of improved acres, within five years; they amount to 671,692 acres—leaving 6,710,720 unimproved. This increase may be attributed to the construction of railroads, plank roads and other means of communication with markets, hitherto unapproachable.

Butter has increased in quantity,........ 264,361 pounds.
Cheese, do do .... 12,991,437 do
and the hay crop has been enlarged to the extent of 25,796 tons.

Thus far the census report intends to present facts. The value of farms, of stock, and implements, being estimates, and necessarily uncertain data, they afford but little information interesting to the farmer. The absence of information as to the quantities of grass seed, of hops, flax seed, maple sugar, and molasses; also of honey and bees wax, at periods anterior to 1850, prevents any comparison with the recent census.

It cannot be fairly questioned that the information obtained and diffused by the several acts authorising the general census of the Union, has saved many millions of dollars to the nation. Neither can it be doubted that this information has directed agricultural labor into more profitable channels than was before practiced; yet, until a more perfect system of agricultural statistics shall have been digested and matured, presenting to the farmer a full, reliable, and plain array of facts, he can only approach the results of labor, the supply of products, and the power to fulfil the demand for such products. The rapid increase of knowledge among the farmers of this nation, seems to demand this more perfect system for the collection of facts relating to our great national resources, as well as to the elements of our industry and toil.

Since the year 1845, a decrease has occurred in the following products, viz:

Wheat has decreased	270,272	bushels.
Peas and beans,	1,182,054	"
Buckwheat,	450,724	"
Potatoes,	7,255,056	"

As affecting the means of sustenance, it will be further noticed that,

Milch cows have decreased in number,	68,066
Other cattle,	126,525
Sheep,	2,990,624
Swine,	566,092

Horses have also decreased in number equal to 58,141, which may be viewed as a loss of labor equal to the force of 348,846 men.

It will be useful to remember that animal and vegetable food has decreased while population has increased, and a larger area of soil has been called into service for production.

Wool has decreased since 1845 to the extent of 3,793,527 lbs., and flax 1,956,485 lbs.

Attention will naturally be drawn to the facts that while the elements of human food and raiment have decreased in quantity, an increase has taken place in grains largely used for distillation and for the production of materials for manufacturing purposes, viz:

Indian corn has increased	3,136,286	bushels.
Rye,	1,181,860	"
Oat crop,	228,163	"
Barley,	476,354	"

Dairy products have also been increased.

You, sir, have labored much and for many years to improve this important branch of our farming interest, and while we are indebted for your untiring zeal in our behalf, regrets will arise that in the continued absence of the desired information, we too often witness much labor lost or wasted in unsuccessful attempts to increase the products of the soil; and labor lost by reason of erroneous or doubtful estimates, leading to wrong calculations in regard to prospective cultivation. Respectfully yours,

J. DELAFIELD.

COUNTY SOCIETIES.

ALLEGANY.

REPORT. JAMES WILSON, PRESIDENT.

The Annual Fair was held at Angelica, Oct. 1st and 2d, and was fully attended. The show of cattle and sheep, taken in regard to numbers and good qualities, was fully equal to that of any previous year. Of swine and poultry the exhibition was quite limited. Carriages were shown highly creditable to our mechanics, and the display of plows, harrows, horse-rakes, and other implements, was first rate. The fruit and vegetable departments were very fairly represented.

The ladies' department of domestic articles was as perfect as could have been expected, evincing much skill and taste. The specimens of butter and cheese were such as should convince every one that Allegany county should and will rank as one of the first dairy counties in the State. The fact that a member of our society obtained the first premium on butter at the last State Fair, is decided proof of the above opinion.

In conclusion, I am gratified in being able to say that the society is in a prosperous condition. As to members, it is on the increase, several having become such from towns from which before we have had few or none. I have no doubt but with judicious or good management it will continue to prosper. This, imperfect as it is, I transmit, and if it tends in the least to promote the great cause of agriculture, the desire of one, at least, is gratified.

The annual election was held on the 2d day of the fair. The following officers were elected: Joel Carr, of Almond, President; Ezra Starr, of Angelica, Secretary; James Lockhart, of Angelica, Treasurer; and eight Vice-Presidents.

Receipts and Expenditures.

Amount on hand Jan. 1st, 1851, cash,	$241 76
Cash received for book,	6 00
Cash from members,	122 00
Cash from State Treasurer.	93 00
	$462 76
Paid premiums,	217 64
Balance on hand,	$245 12

TOWN ASSOCIATION.

Centreville, Allegany County.

B. P. JOHNSON, ESQ., *Sec'y, State Agricultural Society:*

Sir:—When we wrote to you for information in relation to forming an association for agriculture and mechanical arts, I thought that we as an association should hold a correspondence with the State Society, for by so doing it would be a benefit to both. I prepared a letter last spring to send to you and carried it to my associate in office to review and forward the same to you, and I did not know but it was sent till late in the season, he having gone west. We concluded that we would not write until after the election and fair. The fair was held on the 28th day of October last. Owing to the lateness of the season, the weather was rather unfavorable, but such was the interest manifested on the occasion, that the people collected not only from all parts of the town, but from the adjoining towns, at an early hour. We had the greatest collection of people that was ever together in Centreville on any occasion. The show of horses was very fine; some forty in number were entered, amongst which were some of the best stallions in the county. The matched and draught horses attracted much attention, while the mares and colts on the ground showed an increasing interest in the improvement of that most noble animal the horse. Of neat cattle, the show was large; ten or twelve pair of fine matched oxen were on the ground, mostly of native breed. The number and the quality of the steers, gave evidence of quite an interest in the improvement of that branch of husbandry. Of cows, the number was rather limited, enough, however, to show the interest that is felt in the dairy business that is carried on quite extensively in the town. The number of sheep was rather limited, compared with what the town might do. There was five pens on exhibition, wholly of merinoes of excellent quality; they were pronounced by disinterested persons, equal to any in the county. Of swine there was a good show, which speaks well of the improvements which are fast making in this town and adjoining towns. There were but a few coops of fowls.

The show of grain, which consisted mostly of winter and spring wheat, corn and oats, was small. Some fine specimens, however, were presented, which shows what our soil would do under suitable cultivation. Of roots and vegetables, there was a full supply of all except the potato, which has nearly failed with us. Of fruit, owing to the lateness of the season, most of the early fruits were gone; of fall and winter fruits there was as good a display as can be produced in the county, and I might say in Western New-York. The samples of butter and cheese from this town and those adjoining, showed the deep interest that is felt in that staple of Allegany county. Of domestic articles the show was imposing: the rich coverlet, the solid carpet, all of home manufacture; also of various articles of linen and woolen goods on exhibition, together with the knitting and fine needle work, gave evidence of the deep interest which is felt by the mothers for the education of their daughters; and what added still more to the richness and beauty of the show, was the harmony and good feelings which prevailed throughout every part of it. Owing to the lateness of the season and the necessary arrangements not having been made, we had no plowing match. We are in receipt of the Journal, which I think is just the thing that we farmers want. The Journal with the package of pamphlets that you sent us when we first organized, together with four volumes of the Transactions of the State Society, and one volume of the Institute, presented to us by the Treasurer of the County Society in September last—of these few books we have formed a library for the benefit of the members, returnable monthly.

The Association meets, or rather the members, on the first Wednesday of each month, when the various topics pertaining to agriculture and the mechanical arts are freely discussed; as most of the members are patrons of some agricultural paper, the various items of information set forth by each, is more readily disseminated throughout the Society, than otherwise would be done. We have a committee of five persons, called the mechanical committee, whose duty it is, First, when there is any improvement or patent-right, with which our country is flooded, is brought within the limits of the association, to examine its construction, and carefully study its operations and bearings upon the wants of the people. Secondly, when a person wants to make a building of any description, with which he is not particularly acquainted, he lays the case before the committee, whose duty it is to consult with him and assist him in drawing his plan, and give him the amount and cost of materials, and the cost of construction, and such other information as he may desire. Then, there is another committee of five, called the examination committee, whose duty it is to pass through the association at least once a year; visit every man's farm, and suggest such improvements as the concurrent opinion of the committee and the owner may dictate, and report to the association the condition which each farm is in, and also the farm which is best cultivated. The benefits arising from this association are incalculable, the impetus given to the farmer by clearing out and bringing into cultivation, lands which were nearly useless, is manifest in every part of the association.

Respectfully yours,
J. W. CUDWORTH,
Corresponding Com.

CAYUGA.

REPORT. LYMAN SHERWOOD, PRES'T.

The Annual Fair of the Cayuga County Agricultural Society, was held at Auburn on the 1st and 2d days of October, 1851. The days were favorable, and the exhibition of the various animals and articles usually exhibited on such occasions were more numerous than ever before. The show of cattle was fine, of all descriptions; the show of fat oxen exceeded the show at Rochester, as well in numbers as in quality.

The display of matched horses were also very fine, and more by half than at any preceding show as regards numbers. The show of sheep was very good—some very choice ones in all the classes. There were some French Merinoes on the ground which attracted some attention, as there is quite an excitement in this county as regards that class of sheep. Some very excellent and improved varieties of fowls, and extra selection of fruit were shown, as also many new and improved implements of husbandry.

The farmers of the county are seeing the necessity of draining, and are using a great many tile. There is a great deal of clay land in this vicinity that needs draining, and drains made of tile are more durable than those made of stone. The land that five years ago would not raise wheat, last year bore as fine wheat as ever was seen, and all owing to the drains. They are also using the drilling machines to put in their spring and winter grains; they find a saving of seed as well as much uniformity of crops, especially the wheat. The wheat crop was very much destroyed by the "midge" here this last harvest, and has discouraged quite a number of farmers.

This society has for the last three years adopted the plan of the State Society in putting up a fence and charging an admittance fee, by which they have been able to pay their premiums. They have received from all subscriptions and memberships, $681; have paid in premiums $280, and have to pay in winter about $50, and leaving a balance of over $100. Our expenses at Fair were quite large.

We are to have a meeting in January, to determine whether we have permanent grounds, by making a stock company, every $15 entitling a person to membership, and any surplus fund, after paying premiums and expenses are to be refunded to the stockholders. It appears to me, it is the only way in which the Society can pay such premiums as it should.

Officers—Lyman Sherwood, President; C. A. Parsons, Treasurer; H. H. Bostwick, Secretary; and a Vice President for each town in the county.

Receipts from all sources, ...	$681 06
Paid prem., $271.00, expenses $247.11, bal. $162.98,	681.06

Products, Cayuga County, sent to market by railroad, from November, 1851, *to March*, 1852.

There has been bought in this city, from the 20th November, 1851, up to March 1, 1852, the following property, and shipped by railroad to New-York and Boston market, all the products of Cayuga county, to wit: 6,826 dressed hogs, weighing 1,382,039 lbs., at $5.50 per cwt. is $76,012.14; this is an increase over former years. Whole weight about 691 tons of pork. 1,600 head of fat cattle have already been shipped, and 500 head more ready to go; and here follows another feature in our market, it being the first time it has ever been done; Mr. Benjamin Ashby, has bought and shipped to New-York, 130,000 lbs. beef in the quarters, dressed, (the quarters only,) at $3.50 per cwt., is $4,550.00; live sheep, 995; butter 151,200 lbs.; wool 350,000 lbs.; besides some 300,100 lbs. wool bought by our woolen company of this city, for their own use. The whole amount paid to our farmers of this county, for various products, which has gone to the eastern markets by railroad the past winter, cannot be less than $200,000.

CHAUTAUQUE.

REPORT. DANIEL WILLIAMS, PRES'T.

The Fair and cattle show of the Chautauque County Society for the promotion of Agriculture, was held in the village of Panama, in the town of Harmony, Sept. 10th and 11th, 1851, and was attended by a large concourse of people, and the greatest number of animals that has ever been exhibited in the county, since the first organization of the county society. Some of the best specimens of cattle and horses that were ever exhibited. The amount of premiums awarded to the citizens of the county, was three hundred and thirty-six dollars, besides a goodly number of State Reports. The first day of the fair was devoted to the election of officers for the ensuing year, and transacting such other business as came before the society. The officers elected for 1852, were Jonathan S. Pattison, of Hanover, as President, and Daniel Sherman, Secretary. Our county is improving in raising stock of all descriptions, and the greater part of our farmers are engaged in dairying.

Situation, condition, and products of the county.

Chautauque is a large county, and somewhat rolling, and something new compared with the eastern counties. The whole number of acres in the county is 564,230. The number of acres improved, or so called here, is 311,344, and the number unimproved is 252,886 acres. The whole county is very well watered, and generally of a pure kind. Partly passing through clay soil and black muck, the most of our county is well adapted to grazing, for which the greatest proportion of our products are butter and cheese, and raising stock. There are raised in the county, the common native breed of cattle, most of the improved breeds—Durhams, &c. There are raised a goodly number of sheep, and some of the best breeds—some imported French merinoes, and there are some good horses raised in the county—some native breeds, and some from imported horses. Our soil is not so well adapted to grain as many other counties in the State, or so much to wheat as it is to corn and oats. The land is timbered with all kinds of timber that grows in any country—white pine, all kinds of oak, beech, maple, hemlock, white wood, and hickory. The land ranges from $10 to $50 per acre, by the farm, and lands have risen fifty per cent. in the last five years, and are still raising yearly for farming purposes. There are no minerals discovered as yet of any amount in the county. Some sulphur gas in several parts of the county used for lights—lighting light-houses and other public buildings. The census of 1850 gives a full account of our products of all kinds.

CHEMUNG.

Report. A. J. Wynkoop, *Secretary*.

The Agricultural Society first organized in this county not having held a Fair since the fall of 1849, and this society having abandoned its organization, it was deemed expedient to call a public meeting, which was held on the 12th of April last, and the present Chemung County Agricultural Society organized by the adoption of a constitution and by-laws, and the election of S. L. Rood, President; E. C. Frost, Corresponding Secretary; Charles Hulett, Treasurer, and A. J. Wynkoop, Recording Secretary.

On the 8th and 9th of October last, a Fair was held at Horseheads, which was well attended, and the exhibition far more creditable to the county than was anticipated, and the spirit manifested promises future success.

Cash premiums were awarded, amounting to	$109 00
The incidental expenses were	21 93
	$130 93

Several volumes of the Transactions of the State Sociery and the American Institute, were paid as premiums. The Society was ably addressed by Charles Lee, Esq., of Yates county. The following officers were chosen for the ensuing year commencing with the first of January, 1852:

S. L. Rood, President, Moreland P. O., Dix; eight Vice-Presidents; E. C. Frost, Catharine, Corresponding Secretary; Charles Hulett, Horseheads, Treasurer; A. J. Wynkoop, Chemung, Recording Secretary. An executive committee of ten, and a standing committee of twenty, were also chosen, and a committee of two appointed to visit the Yates County Fair as delegates from this society.

Chemung county is rapidly increasing in population and wealth, the railroad facilities for marketing all kinds of produce, have given a new impetus not only to the agricultural, but to the entire industrial interests of this county, and nothing is now needed to place the farming interests upon a par with the other portions of our State, but the more general dissemination of scientific agricultural knowledge. This knowledge, so essential to the entire farming community, can be no where so well and thoroughly learned, as at Agricultural schools. It is a favorite theory of mine, that it is not only better, but far cheaper, to properly educate the child, than to apprehend, try, convict, and support in prison, the criminal. If this theory be true, then every principle of charity and true philanthropy calls loudly upon the great State of New-York to exert her power, resources and influence, in providing the means of so educating every child, that they probably will become useful and virtuous citizens; and where could the poor be so cheaply and effectually educated, both intellectually and physically, and so thoroughly trained in habits of industry that would insure independence, as upon a farm connected with an Agricultural College? And it is to be hoped that no proper effort will be omitted to induce the Legislature, at its present session, to enact the necessary laws to carry out the recommendations of the committee appointed by Gov. Fish.

A school thus organized, would afford opportunities for educating teachers to take charge of town and county agricultural schools, and thus. in a few years, these advantages might be extended to the entire State, and perhaps to other States and countries. It is not sufficient that the sons of farmers should be taught to read and write in order that they may become useful and respectable, but they should receive such an education as would qualify them to prosecute the business of farming successfully; and every child should form habits of industry, and be systematically trained to some useful business that would secure to them when they arrive at years of maturity the means of obtaining an honest support.

By a judicious course of legislation it seems to me that thousands who now are growing up in ignorance and vice, might, without greatly increasing the burthens of taxation, be so trained in agricultural schools as to become useful and respectable citizens. The money that is now expended to apprehend, try, convict and support criminals in this State, would go very far towards defraying the expenses of educating the destitute, and thus change their destiny from pauperism and crime to respectability and future usefulness.

The graduates of such a school as is contemplated would be taught scientifically, practically and thoroughly, all that pertains to agriculture, so that when they leave this school they would be prepared to begin the business of farming when the old man of three score and ten leaves it. What an immense advantage this would give the young farmer, to have all the practical knowledge which the aged have heretofore acquired by a long life of toil, and attained at an immense sacrifice of not only time and labor but money.

This college and farm, as suggested by the committee should be located in a central part of the State, and upon the line of a railroad, where it would be easy of access both to pupils and visitors, for the design of the institution should be to give instruction to not only pupils but every farmer who will visit it. This may be done by making the buidings and every thing pertaining to the farm, models of imitation, hence great care and sound judgment should be exercised in the selection and improvement of the farm, the location and construction of buildings, fences, drains, tillage, &c., &c., all of which should be done with reference to convenience and durability, and as little for show as correct taste will permit. Here every farmer of our State would feel at liberty to visit, and doubtless would receive many valuable hints; and if a diary was open for the remarks of all, undoubtedly many valuable suggestions would be left in exchange for the information received. This institution might also be made a depository, where not only every improved farming implement could be seen and tested, but the best varieties of grain and other seeds procured and exchanged, with all the information necessary for the cultivation of each; thus this institution would greatly benefit the aged as well as the young. The farm should be cultivated so as to yield the largest profit on the investment; and the labor required, performed as far as practicable by the students under the immediate direction of the several professors, so that every principle contained in the lesson could be clearly and practically illustrated and understood, for theoretical knowledge without practice is of little use to the farmer.

For the purpose of securing health and strength of constitution, and correcting the false notion too common among students, and the young generally, that it is dishonorable to labor; every pupil, the rich as well as poor, should be required to labor a portion of each day, either upon the farm or in the work shops; and to correct another error into which the youth is likely to fall, viz; that a fine coat has much more to do with character and respectability than a highly cultivated mind, or hands trained to do what is essential to secure our future prosperity, a uniform should be established of cheap and durable material and suited to the business of farming; in addition to the above suggestion, permit me to say by way of closing this already too lengthy communication, that the most perfect system should be adopted; every tool should have a place, and be kept in its place; and all this should be regulated either by legislative enactment, or rules established by a board of trustees or managers, and each student should be thoroughly drilled so as to acquire system in all that he does; perhaps there is no one thing which ensures to the young greater success than this systematic training.

CHENANGO.

REPORT. J. W. COLLINS, PRESIDENT.

The Annual Fair of the Chenango county Agricultural Society was held at Norwich, on the first and second days of October, and the exhibition of stock on the first day was in many respects very fine, though we are far behind some of our neighboring counties in the production of fine stock, but a spirit is awakened upon the subject that will not be suffered to slumber until there is an entire change in the stock-growing interests of the county. Many excellent cattle are driven into this county from the western part of this State and Ohio, and are fed for New-York market; some of which were exhibited that reflected much credit upon those that engaged in that branch of husbandry. Some fine specimens were exhibited by Mr. Wilcox, of Norwich; Juliand, of Greene; and Ross, of Preston. A fine Short-horn bull was exhibited by W. H. Amsbry, of Otselic; he was got by Meteor, now as formerly owned by George Vail, Esq., of Troy; we may look with confidence for an improvement in the stock of his neighborhood.

A pure bred Devon bull, and two cows with their calves were exhibited by Mr. Miner, of Guilford, that attracted considerable attention; they were fine animals and the cows with their calves were sold on the ground, (being myself the purchaser,) for prices that well remunerate for the raising of blood stock. Splendid specimens of sheep were on the ground, among which were a pair of French merinoes, owned by Messrs. Davis, of Sherburne, and purchased of Mr. Bingham, of Vermont. Two buck lambs of the same breed were exhibited by Mr. Hakes, of Pitcher, and bred by J. A. Taintor of Hartford, Connecticut. The introduction of such animals as the above, though few in number, cannot fail of doing much for the improvement of the stock of our county. The display of horses and colts was good. Many rare specimens of mechanism were exhibited, which show most conclusively that the farmers and mechanics of Chenango county go hand in hand for improvement. Having taken a general view of the field, let us direct our attention to the department under the special supervision of the ladies. The court-house having been tastefully decorated by the ladies of Norwich and vicinity for the occasion was the center of attraction. It was literally filled with the *fair*, and on all sides were exhibited fine specimens of their handy work, and to them are we indebted for a great portion of the interest excited at our fairs. The show of fruits and vegetables exceeded any former exhibition. The show of the products of the dairy was quite limited, considering the importance of the dairy interests of the county, although very fine samples of cheese were exhibited.

The morning of the second day was spent in examining the numerous articles presented for exhibition, and preparing reports for the award of premiums. At one o'clock P. M., we were summoned to the Baptist church, where a large and intelligent audience listened to an able address delivered by the Hon. Henry Bennett of our county, at the close of which, the award of premiums was announced, and the multitude dispersed, deeply impressed with the salutary influence our agricultural society and our annual fairs are exerting upon the agricultural and mechanical interests of the county.

The receipts and disbursements of the society are as follows:

Cash on hand,	$66 95
Received from State,	122 00
Received at the door,	119 99
Voluntary subscriptions and fees of membership,	325 00
	$633 94
Paid out for premiums and expenses,	483 93
Balance in treasury,	$150 01

The Annual Meeting of the society was held on the 6th inst., and the following premiums were awarded on field crops:

George Davis,	best acre	wheat,	30	bushels.
George Davis	do	rye,	30	do
Charles H. Foote,	do	oats,	76	do

Officers for 1852.—Calvin Cole, of Oxford, President; James H. Smith of Norwich, Secretary; Jonathan Wells, of Norwich, Treasurer; seven Vice-Presidents, and a manager from each town in the county.

The following report, by J. W. Collins, is in answer to the circular issued by the President of the State Society:

In relation to Chenango county, it is not strictly a dairy, grain, or wool growing county; different portions of the county being well adapted to each of the above.

1. I consider butter and cheese to be the chief products of the county. An effort was made by the officers of our society in 1849, to ascertain the quantity of butter and cheese that was sent to market, and the result was, as near as could be ascertained, 2,185,476 lbs. of butter, and 1,150,284 lbs. of cheese, without making any estimate of the amount consumed in the county; and the last year will exhibit a large increase upon the above.

2. The number of acres occupied iu its production, would be difficult to state. Chenango dairies have obtained some celebrity in market, and I think that a large portion will rank with the first. Yet I must in honesty say that a considerable proportion sent to market is of an inferior quality.

3. The condition of other important crops. The valley of the Chenango is well adapted to the cultivation of corn, and much is raised. Barley and oats flourish well, and those crops are gererally good throughout the entire extent of the county. Very little wheat is produced, principally spring wheat. The winter wheat does very well in the valley.

4. Cannot answer as to increased number of acres under tillage

5. Increase of animal stock. Very little attention has been paid to the improvement of breeds until within the last three years, which have exhibited a marked improvement in the breeds, and more interest is felt at the present time than at any preceding. Some fine Short-horns have been introduced into the county. I have been engaged for the last two years in rearing a herd of Devons, and have some fine animals on hand. Devon bulls are kept in different parts of the county, but I know of no full-bred cows, except those in my possession. I have also a pure bred Short-horn cow, bred in Rensselaer county, from which I am getting some good stock. The watchword seems to be, onward. Wool-growing has formerly been a prominent business in our county, but the low prices of wool, and the foot-rot have pretty much exterminated the sheep from our farms, but it is receiving a new im-

pulse. Some valuable sheep of the French and Spanish merinoes, have recently been introduced, and there seems to be a growing interest in the rearing of the improved breeds of stock of all descriptions.

6. With few honorable exceptions, there is almost an entire absence of scientific attention to cultivation. Yet I think a star is rising that will diffuse its light over the hills and through the valleys of Chenango county.

7. The value of farms is pretty much stationary.

CLINTON.

Report. Jonathan Battey, president.

The undersigned, in presenting this, the tenth annual report from the Agricultural Society of Clinton county, feels highly gratified in being able to state that a steady advance in the improvement of our agricultural interest is from year to year evidently going forward. This is evinced, not only by the increased and annually increasing interest in our agricultural fairs, but by the general improvement in the appearance of farms, a gradual increase in the average of crops, a greater attention to improvement in breeding and the management of stock, the introduction of improved farm implements, increased attention to the cultivation of choice fruit; in short, by improvement visible in every department of husbandry, in everything connected with the cultivation of the soil.

That all the credit of producing these results is due to this Society is not claimed. The influence of the State Society, through its Fairs and its annual volume of Transactions upon the agricultural interests of this county, has undoubtedly been salutary and beneficial in the highest degree; yet without a county Society to bring its influence to bear upon the minds of our agricultural population, that influence must have been comparatively inoperative.

The time was, when the utility of agricultural associations was doubted, nay when, with "book farming," they were denounced as a public nuisance, when indeed some of our farmers went so far in their opposition to these societies, as to style the whole system one of "legalized gambling." But that time has happily gone by. The utility of associated action in aid of agricultural improvement, as of improvement in other industrial pursuits, has with us come to be universally conceded. Even those who were once loudest in declaiming against such institutions, are now either actively enlisted in their support, or, if too proud to "own up," are yet silently and unmistakeably betraying their conviction, by their readiness to attend the annual fairs and to bring their families along with them, and by their attentive and studied examination of the varied products of skill and improvement which are thus brought together.

The Clinton county Agricultural Society has now been organized ten years. During the first seven years of its existence, its progress was by no means very flattering Its members were few in number, and its pecuniary means necessarily limited; and the array of prejudice and opposition it had to encounter, was really so formidable, that it had about as much to do as it could well accomplish, to keep up its organization; and hence, during the early stages of its career, no very striking traces of its movements were left, to mark its progress. It was, however, even then fulfiling an important mission. By its comparatively feeble efforts, it was silently sowing the seed, from which it is now beginning to reap a harvest of golden fruits.

In the year 1849, a project was started, having in view the establishment of the Society upon a more permanent basis. The plan proposed, contemplated the erection of permanent show grounds for the accommodation of its fairs. For this purpose an appeal to the liberality of our citizens for the requisite means, became necessary. The appeal was made, with a result highly successful; and before the time appointed for holding its annual fair for that year, the Society became possessed of a beautiful site, containing nearly eight acres of ground, conveniently located in the immediate vicinity of the flourishing village of Keeseville, substantially enclosed, with appropriate buildings and fixtures neatly and tastefully constructed, and the whole sufficiently ample to accommodate the Society for many years. This movement of the Society, as its projectors and patrons anticipated, gave to its operations a new and powerful impulse in the right direction. Since that time, it is hardly necessary should add, its career has been one of eminent success and usefulness.

The village of Keeseville is situated on both banks of the Ausable river, which is there the dividing line between the counties of Clinton and Essex. Of the funds raised for the construction of our show buildings, nearly all were contributed by the citizens of Keeseville, and a very considerable portion by those residing on the Essex side of the river. By this means an interest was awakened in the adjacent portions of Essex county, in the subject of agricultural improvement, which resulted, as early as March of that year, in the organization of an agricultural society for Essex county. The material aid thus rendered to our society by citizens of that county, in the erection of its show buildings, was very justly regarded as entitling them, on any suitable occasion, to the right of participation in their use; and by mutual consent the fairs of the two societies in 1849, and again in 1850, were held conjointly, and to the mutual benefit and satisfaction of all parties interested, at our grounds. The perpetuation of these combined fairs—by the consolidation of the two societies, or otherwise—was, up to the latter period, looked upon with favor by a majority of the members and patrons of both societies. But by the following winter, the rapid increase of members to the Essex society, in the southern part of the county, had so changed the tone of public sentiment in that society, in regard to the location of its fairs, that at its annual meeting in February last, a vote was passed for the permanent location of them, for a term of years, at a more central point.

Thus the Clinton County Society, after having held, by the aid of the Essex County Society, two annual festivals of extraordinary character and interest, by which the expectation of the public, in regard to the character of her future exhibitions had been immoderately elevated, was now thrown back upon her own resources. With grounds and buildings ample in extent and adaptation for the accommodation of both societies, it was left to fill, as best it could, not only the portion which had before been occupied by her, but also the portion left blank by the withdrawal of Essex, or also to suffer the mortification of a reputed *falling off* in the amount of the show; a result which, in the estimation of the multitude, could scarcely fail to ensue, in the event of its failure to make the fair of 1851, equal to the combined fairs of the two societies the previous year. By this circumstance, therefore, the society was now placed in a position in which it was really more difficult for the time being to sustain its reputation, than if the fairs of the two societies had never been united. Aware of this, the managers, at an early day, determined upon the exercise of more than ordinary exertion, to promote an increased interest throughout the county in the objects of the society—to draw out a more extended exhibition of its products and resources—and in every practicable way to increase and improve the attractions of its annual show.

Immediately after the Annual Meeting the managers agreed upon and published a list of premiums to be awarded, amounting in the aggregate to $623.00; and at the same time issued an "appeal to the farmers and friends of agriculture in the county" setting forth the objects of the society, and urging its claims upon their confidence, and their active and united support. Preparatory to the annual fair, extensive improvements were made in the buildings, a range of covered stalls constructed for the accommodation of foreign stock, a building erected for the exhibition of machinery, and extra measures taken to secure the exhibition of stock and articles from abroad.

The Annual Fair was held at the show grounds of the society on the 24th, 25th and 26th days of September. Unfortunately the agricultural fair of Addison county, Vt., was held at the same time; and during the same week, courts were in session in three other counties adjoining this. These circumstances doubtless prevented the attendance of many at our fair who would otherwise have been there. A violent rain storm which occurred on the 23d, was also another cause of hindrance, especially to the driving of stock from remote parts of the county; by reason of which several of the towns were not represented at all at the fair, in any department of live stock, and from some others the number was very small.

But notwithstanding all these circumstances, added to the absence of the former exhibition from Essex county, the show was at least fully equal in amount, and surpassed in the general quality of the stock and articles composing it, that of the Clinton County Society separately considered, of any previous year. The number of visitors in attendance was also very large, as much so or nearly as at either of the combined fairs of the two societies. The entire number of entries at the fair was 358—of which 245 were for *premium* and 113 for *exhibition*.

Of cattle, there were 69 entries—54 for premium, and 15 for exhibition; the whole comprising 77 individuals, of which 21 were *thorough-bred* animals of the different breeds, chiefly Durhams, Herefords and Devons, including specimens of each that would be hard to beat anywhere. Several of the *thorough-breds* have been imported since the fair of 1850. The show of horses was a splendid affair. In point of number it was certainly quite respectable, there being 62 entries for premiums, and 35 for exhibition, while in quality it was second to no exhibition of the kind which I have ever seen. The show of brood mares and sucking colts, in particular, was both very extensive and very fine.

Of sheep, swine and poultry, the show was meager; but the specimens exhibited were very superior. The show of dairy products, and of manufactured articles, was also quite limited, and by no means such as to represent correctly the condition of these pursuits in the county.

The exhibition at floral hall would have done credit to the fair of any horticultural society. The show of fruit comprised 225 plates, and included nearly 200 distinct varieties; although with us the fruit crop this year was pretty much a failure—in some departments, as plums, entirely so. Of green house plants and cut flowers, there were on the stands 170 species and varieties. Of vegetables, 57 samples were entered for premium.

The plowing match came off on the morning of the last day. The competition was very spirited, and the work emphatically well done, though done in "double quick" time. The performance elicited a greater degree of interest, and attracted a larger attendance than usual; a circumstance to be attributed to the somewhat novel fact that the plowmen engaged in the contest were all (save one,) at the time vice-presidents in the society.

The annual address was delivered by the Hon. Winslow C. Watson, of Port Kent, the indefatigable President of the Essex County Agricultural Society, in a speech of great ability and eloquence, for which a vote of thanks was returned by acclamation, with a reqnest that he furnish a copy for publication; a request to which I am sorry to say he has not yet found it convenient to respond.

The premiums awarded at the fair amounted to,.....	$326 00
Awarded at the annual meeting of the Executive committee, on the 25th of November, on crops,.........	12 00
Total amount of premiums awarded,......... ...	$338 00

It will be observed that the competition on field crops is light. The premiums offered by the Society for this object amounted to nearly $90, while the amount awarded is only $12. An explanation of this deficiency is to be found in the fact, that while the premiums of the Society are offered to encourage the most economical and profitable modes of cultivation, and while this can only be ascertained by the requisition of accurate statements from competitors, regarding the cultivation of the crops; very few of our farmers are in the practice of keeping farm accounts, and of those who do not keep such accounts *habitually*, fewer still are willing to be at the pains of preserving with a view to competition, the requisite memoranda of their management in the culture of any particular field, lest, in the event of a failure, they should, as they would esteem it, only "get their trouble for their pains."

The crops to which the premiums were awarded were the following:

Spring Wheat—Robert E. Keese, of Ausable, yield, $27\frac{19}{60}$ bushels per acre.

Winter Rye.—Eleazer Arnold, of Ausable, yield, 35 bushels per acre.

Peas.—Samuel H. Moore, of Peru, yield, 25 bushels per acre.

Buckwheat.—Samuel H. Moore, of Peru, yield, 29 bushels per acre, and the same ground also produced 60 bushels of apples.

Carrots.—A. J. Moses, of Champlain, yield, 392 bushels, of 52 lbs., to the bushel, on one half acre; at the rate of 784 bushels per acre.

The above crops being the best that were offered in competition, were awarded premiums. Larger crops than these, I am confident have been grown this year in the county, and it is to be regretted that they were not presented to the notice of the society. The Oat crop was this year unusually heavy; in many instances the average yield of fields embracing several acres was as high as 60, 70, and even in some instances as high as 75 bushels to the acre.

The largest yield of oats in a single acre, which has come to my knowledge, was raised by Sidney Arnold, of Peru. An account was kept with the crop, and it was Mr. Arnold's intention to have offered it for the Society's premium; but being misinformed in regard to the day of the meeting at which the premiums on crops were to be awarded, he did not attend it, and failed of entering the crop. Since the meeting, he has kindly furnished me the following statement respecting it.

SIDNEY ARNOLD'S STATEMENT.

Oats.—"The field which produced this crop, contains a little over two acres, had been pastured with sheep from 1838 up to 1850; no manure ever having been applied on the field, except the droppings of the sheep, and in the spring of 1850, one load of coarse unfermented manure. Soil, a sandy loam, resting on a subsoil of like description, with the addition of a small portion of clay. The field was broken up in the spring of 1850, and planted with corn, potatoes, pumpkins and squashes. The entire crop that year was nearly destroyed by worms; but the ground was kept well cultivated and free of weeds through the season. Depth of plowing that season, eight inches, not plowed in the fall. Plowed for the present crop once, in the spring of 1851, just before sowing, which was quite early, or about as soon as the frost was out of the ground, depth of plowing this year six inches. Amount of seed used, five bushels to the acre, of the variety called the barley or potato oat. The crop was harvested on the 26th of August, while the straw was partially green; stacked in the field till it was cured, and then housed. Thrashed with a machine, and measured in a half bushel. Produce from one acre, 117 bushels by measure, weighing 35½ lbs. to the bushel.

Value of Crop.

117 bushels by measure, sold at 3s.,	$43 88	
Straw, estimated worth,	3 12	
Value of crop,		$47 00
Expense of cultivation and harvesting,		15 00
In favor of crop,		$32 00"

Receipts and expenditures.

Balance on hand from last year,	$38 91	
Receipts at the fair,	612 10	
From the State Treasurer,	84 00	
Per centage on crops entered for premiums,	2 30	
Subscriptions,	2 00	
Transactions sold,	11 25	
		$750 56

Paid premiums and expenses,	$449 50	
Society's note to Keese & Tomlinson,	130 46	
do to Arnold & Keese,	105 97	
Cash on hand,	64 63	
		$750 56

Officers, 1852.—Jonathan Battey, Keeseville, President; ten Vice-Presidents; Anderson Keese, Secretary, Keeseville; Willets Keese, Treasurer, Peru.

Agricultural College and Experimental Farm.—The following resolution adopted January 6, 1852:

Resolved, That we, as an Agricultural Society, are decidedly in favor of the establishment of an *Agricultural College* and *Experimental Farm* by the Legislature of this State, believing that the agricultural interests of the State demand it.

The Annual Meeting was more numerously attended than usual, and the proceedings of a spirited order, evincing a degree of interest in the society and its objects, highly encouraging. The annual address by the President was ordered published.

Report of J. Battey, President of the Society, in answer to a circular issued by the President of the New-York State Agricultural Society, bearing date October 29, 1851, and calling on the Presidents of the County Agricultural Societies for answers to certain questions regarding the agricultural products, &c., of their respective counties, for the year 1851.

1st. "What is the chief product of your county?" The crop yielding the greatest annual income is *hay*.

2d. "Its increase or decrease this year?" The average yield per acre this season exceeds that of last year by about 50 per cent., and is probably 25 per cent greater than the ordinary average per acre through a series of years.

3d. "The number of acres (about) occupied in its cultivation;

the quantity and quality produced? The amount of land mowed in Clinton county this year is about 50,000 acres, and the amount of hay produced cannot fall short of 75,000 tons, or 1½ tons per acre on an average. In quality, the hay grown in this county is not surpassed. Nearly all the hay produced in Clinton county is grown upon upland meadows, which are frequently broken up, manured and tilled two or three years, and again seeded down in grass, and which are never allowed to remain in sward after the cultivated grasses have run out. The grasses most cultivated for hay are Timothy and Clover These are usually mixed in sowing the seed in the proportion of two or three parts of the former to one of the latter.

It is estimated that not less than 30,000 tons of hay are annually required for the supply of our manufacturing villages, and for the teams employed in the manufacture of iron and lumber in the county. And our farmers, tempted by the comparatively high price usually paid for hay, have for years been draining their farms of the elements of fertility, at the rate of 30,000 tons a year, for which the cash equivalent brought back in the farmer's pocket, makes no adequate amends to the impoverished soil. Experience is said to be a dear school, yet some will learn in no other. But the tide is beginning to turn, and many of our farmers, once in the habit of selling the greater part of their hay, have now wisely resolved that the manures produced upon *their* farms, shall no longer go to mingle their gases with the fumes of burning cinders, or to "waste their sweetness on the desert air," around the woodman's hovel!

The price of hay in this county, in seasons of ordinary crops, varies from $7 to $10 per ton, of 2,000 lbs., at the barn. Very rarely it has been sold immediately after haying as low as $5 or $6 per ton. But more often the price has exceeded $10, than fallen below $7. In seasons when the crop is unusually light, and, generally, as often as once in four or five years, farmers have realized from $12 to $15 per ton for a considerable portion of their crop. The *average* price for the last ten years, delivered at the nearest villages, has been about $9 per ton. The price at present paid is $8, or, at the barn, $7. Thirty thousand tons of hay sold at $7, amounts in value to the sum of $210,000. The remaining 50,000 tons, at $4 per ton, which is here considered a low estimate of its value for feeding out on the farm, amounts to $200,000 more, making the aggregate value of the hay crop this year $410,000.

4. "The condition generally of other important crops?"

Corn.—The corn crop is here one of the most important, being the farmer's main dependence for fattening his pork, and for various other farm uses where coarse grain is required. There is not usually so much value sold for cash, of this as of other grain crops; consequently there is more of it retained upon the farm, and if the farmer does not realize, in the meat and other forms into which it is converted, so large an immediate return in dollars and cents, the balance is fully made up, through the manure heap, in future crops. The quantity of land planted in corn this year may be stated at 8,000 acres; and the amount produced, at 240,000 bushels. The yield this year was light, being on an averave only 30 bushels to the acre. The growth was pretty good, but the crop was materially injured by an early frost. The varieties most planted are the common eight rowed yellow, and the Dutton.

The practice of hilling corn at the last hoeing has now gone into general disuse, and the old fashioned mode of harvesting, by cutting the stalks at the first joint above the ear, suffering the remainder to stand until dead ripe, and then plucking the ears letting the "butts" go to waste in the field, has almost universally given way to the more economical mode of cutting up at the roots as soon as the latest ears are fairly "glazed," and allowing the whole to cure together in the shock.

Potatoes.—For a few years past the cultivation of the potatoe has been annually increasing, until it has become, of all the crops which the Clinton county farmer raises, excepting hay only, the most valuable. The disease called the rot, so prevalent and so destructive in many parts of the country, has this year affected the crop, but slightly. At one time the disease made its appearance on the top, to an extent sufficient to excite considerable fear for the crop; but from some cause (probably atmospheric,) the disease was suddenly arrested before the tubers had become much affected; and except in a few localities, and to a very limited extent, the crop can hardly be said to have suffered at all.

During the present and the past season immense quantities of potatoes have been bought up and shipped from the ports of this county for the New-York and other markets on the seaboard, at prices, affording to the producer, a very handsome profit on the cost of production. The prices paid and the extent of the demand have induced our farmers to give their attention to the cultivation of this crop, on a scale much larger than heretofore. The number of acres planted in the county this year, is estimated at 8,000, and the amount of produce at 900,000 bushels. A considerable portion of the crop has already been sold, at prices averaging 33⅓ cts. per bushel; and for the balance of the crop the owners can scarcely fail to realize, in the spring, 50 cents or more. At 33⅓ cents p r bushel, the entire crop amounts in value to $300.000.

Wheat.—The amount of wheat grown in this county, compared with some other crops, is limited. The amount raised, has not for many years been equal to the demand for home consumption; and large quantities of wheat and flour are annually brought here from the west to supply the deficiency. The number of acres in wheat this year, is estimated at 10,000. Number of bushels, 150,000. The crop was rather light in some places, and unusually heavy in others; on the whole a full medium crop. The varieties of wheat usually raised, are the Pea and the Black Sea. The former makes more and better flour; the latter ordinarily gives the greatest yield. Very little *winter wheat* is sown. The wheat midge, has pretty nearly disappeared, and seldom does much injury.

Oats.—Of all the grain crops, oats may be regarded as the staple product of the county. For many years it has been rather the main dependence of our farmers for raising money. The manufacture of iron, which is, or rather *has* been very extensively carried on in this county, and the making and getting to the lake of lumber from the forests in the interior, furnish employ for a vast number of teams, for the supply of which the oats raised in the county are always insufficient, and large quantities are annually required to be purchased abroad and brought on to supply the deficiency; hence the price of oats has generally been higher here than in any of the cities, by the cost of transportation. The effect has been that our farmers have turned their attention largely to the production of this crop. The quantity of land sowed to oats this year is about 16,000 acres; the average yield per acre, 40 bushels; and the amount of the crop, 640,000 bushels. The crop this season has been one of the best ever raised. In numerous instances the average yield of entire fields has been as high as 60, 70, and even 75 bushels per acre. The abundance of the crop, added to an extensive decrease in the amount of business connected with the manufacture of iron, has reduced the price of oats to 32 cents per bushel of 32 lbs. In former years the price has oftener been above than below 40 cents per bushel.

Rye.—With farmers generally, this is not a favorite crop; as on a good land, either wheat or oats usually produces a more valuable crop. As a general thing rye is only sown upon land that is either too sandy and light, or too much worn to produce a good crop of wheat or oats. Number of acres in rye this year, 2,000; produce, 30,000 bushels.

Barley, buckwheat, peas, and beans, are cultivated only to a limited extent, and chiefly for home consumption.

Root Crops.—Of root crops, (other than potatoes,) grown in ordinary field culture, the amount produced is estimated at 150,000 bushels; of which 100,000 bushels are carrots, and the remainder beets and turnips. They are usually fed out to stock.

Orchard Products.—The soil and climate of this county, are peculiarly well adapted to the cultivation of the apple, pear and plum. The cherry, especially of the Duke and Morello families, thrives well. The peach, nectarine, apricot, and quince, are only half-hardy with us, and are not much cultivated. The plum is subject here, as elsewhere, to the ravages of the curculio, which, unless destroyed by hand-picking, or by swine, or poultry, seldom leaves much to the owner. The pear is equally hardy with the apple, and grows and bears as well. The blight, in any of its forms, is hardly known. Heretofore the cultivation of this fruit has been confined exclusively to the garden, and even there it has been very much neglected. Within a few years, however, it has received increased attention; and in some parts of the county, orchards are beginning to be planted.

Of the apple, there are orchards of greater or less extent, upon nearly every farm. These were generally planted by the first settlers, with trees grown from seeds of their own planting. In In after years, a portion of the trees, in most orchards, were engrafted with improved varieties, but the larger portion were left unchanged. In the progress of the temperance reformation, many orchards were cut down; and a general neglect in the care and culture of what was left soon followed, from the effect of which, greater numbers have since perished than were at first destroyed, and for many years our orchards were generally in a dilapidated and miserable condition. Within a few years, however, a new interest in the subject of fruit culture has been awakened, and immense numbers of trees of choice varieties are now being annually planted out. Better care is also taken of our old orchards yet remaining, and the improved quality of the fruit is beginning to show the effect of more generous treatment. Our apple crop this year was lighter than usual, the fruit less fair. Most of the fruit is consumed in the county. The ordinary price of good grafted varieties, is fifty cents per bushel.

Dairy.—The fact that ours is an *importing*, rather than *exporting* county, so far as relates to the products of the farm, necessarily dictates to the farmer a scale of productions, differing materially from one that would be appropriate under other circumstances. As a general rule, the farmer here realizes the largest profit, from the production of those articles, in the cost of which, to the consumer, if procured from abroad, the expense of transportation bears the largest proportion to the market value of those articles here; and the smallest, where the proportion is reversed. The products of the dairy are so easily and cheaply transported, that the dairymen of Vermont can supply the demand here for butter and cheese at prices which render it impolitic for our farmers to compete with them. The amount of butter annually made in the county, does not probably exceed 800,000 pounds. Of cheese, the amount annually produced is about 400,000 lbs.

Honey and Maple Sugar.—The amount of honey and bees-wax annually produced in the county, is estimated at 40,000 lbs.; and the amount of maple sugar at 30,000 lbs.

Flax is not cultivated except in a few instances. Probably nine-tenths of the flax produced in this county the present season, was raised by one person, Thomas I. Whiteside, of Champlain, who had 150 acres, which produced 200 lbs. of lint, and 9 bushels of seed to the acre.

He estimates the value of his crop at..............	$4,200 00
Cost of crop,..................................	2,512 00
Profit,...............................	$1,688 00

Profit per acre, $11 $\frac{25}{100}$.

5. "The increase or diminution of acres under tillage for all purposes?"

There is probably an *increase* of about 5 per cent. annually:

6. "The increase or diminution of animal stock? and the improvement of breeds?"

The amount of stock kept in the county is decidedly on the increase. The rate of increase is estimated at 10 per cent. annually. In every department of stock, from horses and cattle down to geese and hens, a great deal of interest is taken in the improvement of breeds; and a great deal is being *done* for the accomplishment of that object.

Cattle.—In the class of *thorough breeds*, we have the Short-horn, the Hereford, the Devon, and the Ayrshire—and as fine specimens of each as are often found. The Short-horns are the most numerous and are by most preferred, while each of the other breeds has its advocates as strongly biased in its favor. Before the introduction of the above named breeds, the general stock of cattle in the county had been much improved by the introduction and admixture of other improved breeds, which have been superseded by the above. Of these the Long-horns and the Teeswater, were the principal. The Yorkshire was also introduced, but fortunately was not much disseminated. Number of cattle in the county, estimated as follows:

Milch cows,	10,000
Working oxen,	2,000
Other cattle,	18,000
Total number,	30,000

Horses.—The breeding of horses for the purpose of sale in the Boston and New-York markets, is becoming a business of some importance; and great attention is being paid to the improvement of this kind of stock, as may be inferred from the fact, that no less sum than $3,500 was this fall paid by one of our farmers for two or three equal shares in the ownership of a single Black Hawk colt, to be used in this county next season. There are also in almost every town in the county, one or more stock horses of this celebrated breed. But while this and the Morgan breeds are so highly prized, the advantages of a judicious cross between the English turf horse and our large mares, are esteemed by many as promising results highly beneficial. Of this class of horses, we have several in the county; and the progeny of some of them are now coming into service, and giving promise of improvement fully equal to the expectations of breeders. A horse owned by Messrs. Lapham, of Peru, called the Leopard, originally the property of the Duke of Bedford, is probably the best animal of this breed in northern New-York, if not in the State. The number of horses of all ages in the county, is estimated at 10,000.

Sheep.—Less attention is given to the raising of sheep, than of cattle or horses. There are a few flocks of full blood Merinos, which would not in any respect suffer by comparison with the best flocks in Vermont; but the description of sheep most raised, is a cross between the Merino and the common or native sheep. For the purpose of mutton, here the leading object, this cross answers a very good purpose. We have also the Cottswold, the Leicester, and the South Down; and some experiments are being made to test the advantages of crosses between these and our common sheep, the results of which are not yet sufficiently developed to warrant an opinion of their respective merits. The number of sheep in the county is estimated at 40,000.

Swine.—At the high prices which have usually been paid in this county, for all kinds of coarse grain, our farmers have found it unprofitable to keep more hogs than are required to consume the slops from the kitchen and the dairy. The amount of pork made in the county, has therefore, always fallen greatly short of supplying the demand for home consumption. Number of swine in the county, 15,000.

7th. "The increased, diminished, or absence of scientific attention to cultivation?" The benefits which science is capable of conferring upon agriculture, are generally conceded, and it may be safely stated that increased attention is given by many of our farmers, to the application of science in the cultivation of their farms. It must be confessed, however, that there is a great deal of room for improvement, as more than one-half the whole number of farmers in the county, have not yet become sufficiently convinced of the utility of science, to manifest their conviction by that best of practical tests, subscribing for an Agricultural paper. The number of farmers in Clinton county, is 2,200, the number of subscribers to agricultural publications is probably a little short of 1,000.

8th. "The increased, diminished, or stationary value of Farms?" In the northern part of the county, the value of farms has increased 100 per cent within ten years past, and the value is still increasing; a result in part, if not principally of the recent opening of railroad communication with Boston, and other Atlantic cities. In the southern part of the county, which is more largely interested in the manufacture of iron, the great and unprecedented depression in the iron business; consequent upon the operation of the tariff of 1846, has had the effect to diminish the value of farms in the neighborhood, within the last two years, at least 10 per cent., and in some localities even more. The average value of farms throughout the county, however, may be set down as *stationary*, or slightly on the increase.

COLUMBIA.

The Annual Exhibition of the society was held at Hudson, and was creditable to the society, and gives evidence of the increased interest which is being given to the subject of improved agriculture in the county.

The committee on discretionary articles, which were of a high order of excellence in general, and in extent and variety equal to any preceding exhibition, remark, that very many articles, for the production of which, the mechanics of the county enjoy no mean fame, were not sent to our exhibition. No boots or shoes, no millinery, no ornamental signs, no cabinet ware, no cotton or woolen goods, the products of our manufactories, no domestic linens or woolens, no hosiery, none of the very many productions which exist in profusion in our stores and sales room were presented, to attest the skill of our artists, mechanics and household manufacturers.

We regret that there was only one specimen of seed potatoes, raised from the ball, only two specimens of seed wheat, and two of oats, when there ought to have been an hundred of each. These things ought not so to be. Pride, patriotism, and self-interest ought to induce our farmers, artizans, and mechanics to bring forth all their treasures, on the annual festival of our farmers, and it is believed that no more profitable mode of advertising their wares can be adopted by mechanics and other producers of articles used by farmers, than their exhibition here.

Officers, 1852.—James McGiffert, Hudson, *President*. Norton S. Collins, Hillsdale; Peter F. Mesick, Ghent; Isaac P. Van Allen, Kinderhook; Charles Esselstyne, Livingston, *Vice-Presidents*. Christopher Garner, H. Van Alstyne, John Pierce, E. G. Studley, Elisha Bushnell, D. D. Barnes, Wm. Phelps, Dr. Prine, Seymour Foster, Wm. D. McGiffert, Henry Poucher, Elisha Sweet, *Executive Committee*. Frederick A. Gifford, *Secretary*. Henry C. Miller, *Treasurer*.

Amount received from members,	$217
Expended in premiums,	309

The address delivered by Charles Esselstyne, Esq., was a very interesting one, and contained much valuable instruction which we trust will be remembered by the farmers of Columbia, and put in practice. It is gratifying to learn, that Columbia, once famed for its wheat crops, which for years past have not been seen, now can say, "that this season our crop of wheat is as fine as any at the west, both as to quality and quantity per acre." The reason given for the discontinuance of this crop, "that much of our lands have been cultivated through several generations without having received that amount of nutriment necessary to restore them to their original fertility, and are unsuited to this crop," is undoubtedly true; but it is one of the encouraging signs of the times, that the farmers of Columbia have begun to *bring back* their exhausted lands to their former fertility, and the result is, "wheat in quality and quantity per acre equal to the wheat lands of the west." We trust this satisfactory commencement will increase in extent, until the soil of Columbia shall, throughout the entire county rank among the very first in the State for its farming and its products.

We give, from the address of Mr. Esselstyne, some remarks on *The American Farmer*:

The opinion has been too long prevalent among our people, that a son intended for the pursuit of farming, required a very limited education. If he could read his bible, write his name and cypher through the four ground rules of arithmetic, he was sufficiently learned for his future calling; and this large stock of learning must generally be acquired before the lad had passed into his teens. This opinion we conceive to be erroneous, and shall attempt to present an imperfect sketch of the kind of education that every farmer should possess.

We contend that the American farmer should be a good geologist. A knowledge of this science will enable him to determine when he examines his soil, of what it is composed, whether it contains silex, feldspar, quartz, greywack, granite, limestone, or gypsum; and which of his lots is best adapted to the raising of wheat, or rye, corn or oats, roots or grass. He should be a good chemist. A knowledge of this branch of science will enable him to select with judgment his manures from the animal, the vegetable and the mineral kingdoms. He should know in what state his compost or manure contains the most food for his plants, and what is the desired food for the different kinds of grain and grasses he wishes to cultivate; thus by combining a knowledge of chemistry with that of geology, he will be able to analyze the different kinds of soil in his farm, and to know what crops he can grow to the greatest perfection. This knowledge, aided by an ordinary propitious season, will enable him to reap a rich and abundant harvest to compensate him for his labor and his toil.

The farmer should be a clever botanist, that he may be able to analyze Flora's kingdom of plants and flowers. No study is so pleasing to the lover of nature and of her works as the study of botany. A knowledge of botany will enable him to distinguish the poisonous from the harmless plants, and he will guard his flocks from the poisonous laurel whose rich and luxuriant foliage is so apt to tempt that inoffensive animal, the sheep, to crop its leaves while death is the sure result of such indulgence.

With a knowledge of geology, chemistry and botany the farmer becomes a man of science, and of sciences which are easily acquired, and of the greatest importance to him in his agricultural pursuits. With due deference to the opinion of others, I would ask, should not the branches of science, viz: geology, chemistry and botany be universally taught in all of our common schools? The time necessary to acquire a general knowledge of each, sufficient for all practical purposes, is short, in comparison with more abstruse subjects. The apparatus necessary to illustrate and elucidate, may be very simple, and of small expense. Thus all our sons, destined to become farmers, would be properly educated for their profession.'

But this is is not all we would have our farmers to learn preparatory to entering upon their calling or occupation. The farmer should also understand something of mechanics; with a knowledge of the use and power of the lever he can determine the weight or power necessary to raise a stone or other weighty substance he wishes removed—he will know where to place his fulcrum, and how long his hand spike or lever should be to raise the weight he desires removed. This knowledge will not only save time and labor, but often prevent us from overtaxing our muscular power beyond what it can sustain. Medical men often trace many a fatal injury to imprudence in lifting beyond our strength, which a knowledge of the lever would have prevented. I mention this branch of science because it is so often necessary to apply the crowbar and hand spike to remove huge stones, which not only impede the plow and the barrow, but take up land that should be covered with the golden grain.

The American farmer should have a thorough knowledge of the common rudiments of an English education. This will enable him at his leisure, to communicate his ideas and his experiments in language plain, chaste and correct; and he may, through some of the many agricultural journals, scatter far and wide the results of his experiments, for the benefit of others. A farmer thus educated would rank at the head of his profession; and among this class of farmers you would behold nothing of that mode of farming commonly called the "skinning system," which reduces the land to that state of poverty and sterility, that it no longer will pay the expense of cultivation. Should it then remain a matter of surprise to the occupants of such lands, with no knowledge of science which would enable them to reclaim them, removing to the rich and boundless prairies of the far west?

Let our sons then be properly educated for their profession as farmers, as we would educate those destined for the bar, the medical department, or the pulpit; and I venture to assert that they would rank in usefulness, respectability, intelligence and wealth, with those of the more learned professions.

I would refer to one case to show how the farmer educated for his profession can succeed where ignorance would starve. I refer to our own lamented Jesse Buel. He was a practical farmer and commenced farming with moderate means upon the barren sands west of the city of Albany. The results of his farming operations were truly astonishing to all. He soon converted, by mixing soils and applying the proper manures, those barren sands into one of the most productive farms in the county of Albany—he increased in wealth, in knowledge, and usefulness, and with a liberal hand he scattered far and wide through our land the lights of his experience, and the benefits of his scientific experiments in agriculture.

Finally, I would say to the young men who are destined to become farmers,—set your aims high, strive to become master workmen in your profession, learn the nature of soils, the benefits, the proper application of manures, and become well qualified for your honorable profession. And though you may never become a Washington, a Clay, a Van Buren, a Webster or a Buel, yet you may become intelligent and prosperous farmers, an honor to your country and ornaments to society.

CORTLAND.

REPORT. NOAH HITCHCOCK, JR., PRESIDENT.

The Cortland County Agricultural Society held their Annual Fair and cattle show at Homer, on the first and second days of October. This, its thirteenth exhibition, was distinguished by the unusually large numbers in attendance, both of spectators and exhibitors. The exhibition of all kinds of stock, and the entries made for premiums, exceeded those of any previous year. The neat stock on the ground was numerous beyond expectation, and in quality such as to afford gratifying evidence that our farmers are beginning to appreciate the importance of improving their breeds. The display of milch cows was highly gratifying, and, indeed, every class in the society's premium list was creditably filled. In horses, sheep and swine, there was an equal improvement upon any former exhibition. But the dairy, which, for some years past has become the staple of Cortland county, made an attractive feature in this show; no less than sixteen premiums were offered on butter and cheese, and the competition in this department was full. The exhibition of agricultural implements and mechanical products, would have done credit to a larger county than Cortland. There were lengthy catalogues of articles of the best construction and latest improvement for the use of the farmer, the mechanic and the house-keeper.

Floral Hall, which includes the department of domestic manufacture, horticulture, &c., was also well filled, and we found that churns an. cheese-presses have not yet driven all the looms from the houses of our farmers, nor deprived their wives and daughters of a good deal of time that must have been devoted to the production of a variety of articles of taste and luxury.

The plowing match came off on the forenoon of the second day. The excellent condition of the ground, and the spirited competition for the nine premiums offered, sustained the interest of a large concourse till the last furrow was turned.

After the annual dinner, the society listened to an excellent address of E. Marks, Esq., of Onondaga county. His remarks were such as a practical farmer, desirous of the improvement and elevation of the great producing class, would address to his fellow agriculturists. At the conclusion of the address, the reports of the various committees were read, and premiums awarded to nearly $250, besides 62 volumes Transactions, 67 Agricultural papers, and 15 diplomas.

The first premium on *Winter Wheat* was awarded to Hammel Thompson, 35⅓ bushels to the acre, of the Soules' variety. Second premium to the same, 31½ bushels of the Mediterranean. Third premium to Anson Fairchild, 25⅔ bushels per acre, Blue stem variety. *Spring Wheat*, first premium to Moses Kinney, 23¼ bushels Black sea variety. *Barley*, first premium to Anson Fairchild, 40 bushels per acre. Second premium to S. Patrick, $39\frac{9}{16}$ bushels. *Beets*, H. Fairbanks, 78 bushels on one eighth of an acre. *Carrots*, first premium to M. Kinney, 800 bushels per acre.

Fat hogs, 1st premium, Jacob M. Schermerhorn. No more entered; the following is his statement:

1850. Dec. 26th. Jacob M. Schermerhorn purchased two pigs, age four and a half months, weighing 162 lbs., cost 5 cents per lb., amounting to	$8 10
Amount of feed consumed by them, viz: 6 bushels corn in the ear, fed out to them from Dec. 29, 1850, until new corn was fit for use at 2s.,...........................	1 50
Three bushels soft corn, fed early in the fall at 1s.,.....	38
Thirteen bushels shelled corn ground and mostly scalded, 4s. per bushel, ...	6 50
Slops (milk) from 2 cows, 16s., ...	4 00
	$20 48

Proceeds from above hogs when slaughtered on 2d of December, 1851:

Weight of hogs dressed 852 lbs., sold at 5½c.,	46 80
Rough lard not included above, 31¾ lbs. at 7c.,	2 22
	$49 08
Net profits,	28 60

Weight of hogs on foot,	1,000	pounds.
Weight dressed, including rough lard,	883¾	"
Shrinkage,	116¼	

There is manifestly an increased interest taken in the occupation of the farmer in this county, and the beneficial effects of this society with its annual fairs, are distinctly apparent.

The financial condition of the society will appear from the following abstract from the books of the treasurer:

To balance on hand from last year,		$134 52
Received from annual members,		130 00
" " admissions to Floral Hall,		105 72
" " 1 volume Transactions sold,		1 00
" " Treasurer State of New-York,		75 00
		$446 24
Amount paid for premiums,	$240 62	
" " incidental expenses,	21 75	
		262 37
Balance in Treasurer's hands,		$183 87

Officers for 1852: Anthony Freer, of Cortlandville, *President;* Amos Rice, do., *Corresponding Secretary;* L. S. Pomeroy, do., *Recording Secretary;* Morgan L. Webb, do., *Treasurer;* four Vice-Presidents and an Executive committee of eleven.

Report of N. Hitchcock, Jr., in answer to the circular of the President of the State Society.

Much do I regret that it is not in my power, fully and definitely, to render you all the desired information. I have visited the clerk's office, for the purpose of collecting statistics in regard to the number of acres cultivated for particular crops, and the amount of product; but there I found, that in long columns, all was unadded and unarranged; and you can readily perceive, that for me to come to any definite conclusion would be a task of no small difficulty. But those facts, in regard to the interest and prosperity of agriculture in our county, which may be derived from personal observation, I feel a pleasure in communicating; and will state in general terms, the principal sources of wealth for our county. And, 1st. I can with confidence say, that the principal product of our country is that of the dairy. The soil is well adapted to the growth of grass, and especially to that of a grazing quality; and I can unhesitatingly give it as my opinion, that there is scarcely another county in the State which, in proportion to its size, annually sends so large a quantity of butter and cheese to market as this. For the past few years the amount of butter and cheese produced in this county has been rapidly increasing, and usually in market, Cortland county dairy products stand high.

The cultivation of Indian corn, oats, and barley, receives considerable attention; the soil is generally adapted to their growth, and they flourish well. This cannot be called a wheat growing country; some, however, is raised, but not as much as is consumed.

The number of acres under tillage, I should think, remained about the same; while some lands are cleared and tilled, others are seeded and used for pasture lands.

The amount of animal stock is increasing. A great many cattle are here raised, and a great amount of pork prepared for market. But the dairyman counsels his own interests in regard to the breed, choosing those which possess the best qualities for dairy cows; paying less attention to their beauty of form, or aptness to fat than to the amount of butter or cheese which they will produce. Some fine animals, however, are reared, and a general improvement of breed is visible.

7. "In regard to scientific attention to agriculture."

It is deeply to be regretted, that there is in our county so little attention paid to a subject of such vast importance; while *many* of our farmers are plodding their way on in the same old path that their fathers have trod, but a very few branch out, and in their most noble, if properly conducted vocation, call to their aid the strong arm of science. It might almost be said that there is an *absence* of scientific attention to agriculture; but *thus* I hope it will *not always be.* With you I would exert my feeble influence, and strive to raise to its proper level the subject of agriculture. The value of farms is increasing, and should the now contemplated and surveyed railroad, through the heart of our county, be completed, the value of farms would be greatly increased.

I have now replied to your divisions as well as I am able; and regret that it is not in my power more clearly and definitely to delineate the agricultural interests of our county; but before I close I wish to express it as my sincere desire and that of many others in this county, that an Agricultural College which shall have as a prominent character the application of science to agriculture, may be speedily established. What would more promote the interests of agriculture? Several talented young men of my acquaintance would gladly avail themselves of the advantages to be derived from such a school; they would much rather become scientific farmers than follow a profession, if equal advantages were offered for the attainment of their ends.

DELAWARE.

The Annual Fair held in this county on the 8th and 9th of October, exceeded by far any heretofore held by the society.

We will only say that the display of stock showed a decided improvement over previous years. There was also a fine show of vegetables, grain, butter, cheese, sugar, fruit, &c., &c. The ladies were creditably represented in their department. The portion of the grounds set apart for their handiwork presented a fine display of quilts, counterpanes, embroidery, paintings, artificial flowers, &c., &c. Our mechanics, too, were on hand with some beautiful specimens of household furniture, agricultural implements, boots, artificial teeth, &c. Mr. Law, the president of the society, showed a handsome specimen of *salt* manufactured at the salt spring in this town—now owned by Hon. H. D. Gould.

The plowing match, a new feature at our county fair, took place on Wednesday. There were several entries. The first premium was awarded to James Irwin, of Delhi.

The address, by Hon. Horace Greeley of New-York, was delivered at noon of the second day. We have heard but one opinion expressed as to the address—that of general approval.

DUTCHESS.

In reporting the proceedings of the Dutchess county Agricultural Society, it is a source of the highest satisfaction to be enabled to say that the results of our Annual Fair and cattle show fully realized the anticipations of the most sanguine amateurs in the science of agriculture.

The diversified character of the soil and natural adaptations of the different sections of our county to almost every variety of agricultural pursuit, renders it in many respects peculiarly favorable towards enabling the associated farmers to make a fine display at their annual festival. Although the county has long enjoyed a high reputation for the thrift, enterprise, and success of its farming interests, yet in viewing its entire natural advantages for the attainment of such results, we think that there are but few of her sister counties which are not capable of showing a more even surface, and a far more easily tilled soil.

The range of Fishkill mountains, traversing the southern and eastern sections of the county, send out branches in such a manner that the whole surface, from the Hudson river to the Connecticut line, is divided into valleys and ridges differing very materially from each other in their natural formations, and, of a consequence, equally diversified in their capacity for agricultural productions. On the east, we find the white limestone and marble prevailing through almost the entire length of the valley traversed by the Harlem railroad, in close connexion with the gravelly, and in some places, alluvial bottoms adjoining the Croton and Ten-mile creeks. The high range of hills dividing the waters which flow into the Housatonic from those which, taking a westerly direction, find the tide water in the Hudson, are much broken by rocky ledges, covered in many places by a fine growth of timber, principally of the varieties of the oak, chestnut, maple, ash, hickory, birch, &c., which have furnished the charcoal for the iron furnaces, which are also principally supplied with ore from the same range of hills, upon which are also located some of the finest grazing and meadow lands in the county, or perhaps in the State. Adjoining these hills on the west and contiguous to the Fishkill and Wappenger's creeks and their tributaries, we find an equally varying character of surface and soil; now loam, now slaty ledges, now alluvial and gravelly bottoms, and occasionally limestone districts, together with some sections in which clay can be considered the predominant characteristic of the soil. Hence it is almost impossible to say whether the county is better adapted to grain-growing than to grazing, as there are hardly five consecutive miles in the county which do not contain some of the best and some of the poorest lands adapted to either of those pursuits; and generally, the exhibition of agricultural products at our county fairs would seem to correspond with this universal character of the soil from which they are produced.

The Annual Fair and cattle show was held this year at Washington Hollow, on the 1st and 2d days of October, and was fully equal to any which the society has ever before given, in respect to the quality of the farm produce or stock, although we have reason to believe there would have been a more extensive collection, and a much better exhibition of both, had not the excessive drought which prevailed during the entire summer, frustrated in a great measure the designs of our most enterprising friends.

It will be observed by the few premiums awarded on crops, and the comparatively small merit of those to which premiums were awarded, that in this respect we are considerably behind the productions of former years. But I am happy to be able to say that the spirit of enterprise has by no means abated, but on the contrary we are encouraged to undertake the erection of permanent structures for the accommodation of future exhibitions. The society have seriously felt the necessity of suitable accommodations for their annual fairs, and could see no way of obviating the difficulty except by locating them permanently or at least for a term of years at one place, and erecting buildings of their own, which has been proposed to be accomplished by voluntary subscription. And they determined upon their location at Washington Hollow, as being the most central portion of the agricultural district of the county.

The exhibition of cattle and horses this year evinced a steady and judicious improvement in those departments, and the exhibition of sheep, I feel warranted in saying, was never equalled in the county. The other departments were much the same as in former years, excepting poultry, which was vastly improved, and swine which was considerably inferior to that of last year.

There were over $350 awarded in cash premiums, and about one hundred and fifty volumes of agricultural and other books. The annual address was delivered by Dr. Underhill of Westchester county, on the subject of subsoiling and the tendency of manures to ascend and evaporate, in contradiction to the more commonly received opinion that they descended into the soil. It was one of those eminently practical addresses, such as farmers love to hear, and was received with decided approbation by an attentive audience. The number of members for 1851 was 243.

At the December meeting premiums were awarded,

To Mr. William Herrick for the best 5 acres of corn, 320 bush. 27 qts.
do do for the best 5 acres of oats, 361 " 8 "
Mr. G H. Knapp, best 1 acre of wheat,..... 22 " 21 "

Officers for 1852.—Elnathan Haxtun, of Beekman, President; A. B. Knapp, E. L. Barlow, Aaron Vail, William Kelly, E. Thorn, and B. F. Arnold, Vice Presidents; Barclay Haviland, Treasurer; Samuel T. Tabor, Secretary.

ERIE.

REPORT. W. R. COPPOCK, V. PRES'T.

Our county fair, came off at Lancaster 10th and 11th of September. We had promised ourselves much in the way of a large as well as fine display of agricultural stock, but from accidental circumstances, such as too early in the season, the great heat for several days previous, and an unlucky selection of exposed grounds, the exhibition was not a large one. Very many attended personally who had desired and matured arrangements for their stock, &c. What there was, however, was good. As exhibitors under such circumstances are of the active and right kind, their commodities are likely to be good also. There was a good display of horses and working cattle, some fine sheep, and an excellent display of domestic wares. Butter and cheese, for the very center of excellence, was meagre. Of agricultural implements, there has, (excepting the State show,) never been so fine a display. The Messrs. Mason and Lovering of our city, having recently established one of the largest and most extensive establishments in the State, made a grand display. This establishment is an honor to our city, and will work great good to our farming interest, by furnishing the tools needful, which alone can do good work.

We feel sanguine that our county society, which has more or less, received an impetus from our Horticultural society, is on the road to improvement, and that ere long we may vie with the many others of our State who already are reaping the reward of spirited and intelligent labors of agriculture. Fruit culture is receiving increased attention throughout the country, and no section of our State is better adapted to the successful growth of fruits generally, than Erie.

ESSEX.

REPORT. WINSLOW C. WATSON, PRESIDENT.

Since the last annual report of this society its connection with the Clinton County Society has been dissolved. This measure although adverse to the opinion of many of the most zealous friends of the society, was demanded by the wishes and interests of the southern and central sections of the county. The first independent fair of Essex county, was held at Elizabethtown, the shiretown of the county, on the 17th and 18th of September. The liberality and public spirit of the citizens of that vicinity, prepared gratuitously and with no expense or liability to the society, ample grounds, well enclosed and embracing every required erection and convenience. As it has been remarked in previous reports, the peculiar topography of Essex county, and its vast territorial extent, render it almost impracticable to concentrate at any point, a just or adequate exhibition of animals or products from all parts of the county. The position of Elizabethtown is central, and the fair was more immediately sustained by that portion of the county, and yet we were happy to observe that the presence and the competition from the remote towns were much more general than upon any previous occasion. Almost every section of the county was represented, not only by interested and approving spectators, but by exhibitors and competitors. We are confident that the causes which have limited the influences of the society to local rather than general efforts will be rapidly surmounted, and that all parts of the county will gradually participate in its efforts and enjoy its benefits. We indulge the grateful assurance, that it has already become *the institution* of the county, and that its prosperity and growth are cherished by the warmest feelings of our citizens. The fair was attended by an immense concourse of spectators, embracing all classes, ages and conditions. The exhibition in all its branches, was in the highest degree satisfactory and creditable to the county.

We have repeatedly adverted, among the essential elements of our agricultural wealth to the Black Hawk breed of horses which are very extensively propagated throughout the county. Their high reputation was amply sustained on this occasion. These horses, it is believed, originated in Western Vermont and possess only a slight and remote infusion of foreign thorough breed stock. They are all distinguished by the peculiar characteristics of the breed and are pre-eminent for beauty, action, docility and endurance. They are in the most active requisition, at exorbitant prices, ranging from $100 the sucking colts, to $500, and in some instances far higher for the choicest animals. The rearing of these horses has become a very prominent and valuable branch of our husbandry.

Specimens of both Durham and Devon cattle of purest blood and very superior qualities, were exhibited at the fair. The public attention has been strongly attracted to these animals by the exhibitions of our society, and many very rare and splendid individuals have been already introduced into different districts of the county.

The display of fine wooled sheep was excellent, and we think could scarcely be exceeded. The wool growing interest of the county has received the close and persevering attention of many of our most intelligent and observing farmers, which has resulted in the formation of numerous flocks embracing almost every desirable excellence. Most of the prominent and sagacious wool growers do not incline to the opinion that their flocks would be improved by a cross of the recent European importations. The county of Essex is peculiarly appropriate to sheep husbandry, and is now receiving an impulse which will place it among the most conspicuous wool growing districts of the State. We are happy to report that the notice of our farmers has been directed to South Down, Cotswold, Lincoln, and other varieties of sheep, particularly adapted for mutton, and that many fine animals of these breeds have been introduced into the county.

The department of female industry was well sustained at the fair, but that of the mechanic arts, in which we are supposed particularly to excel, did not meet the expectations of the society. We were alike surprised and gratified among the miscellaneous articles to receive entries of several exceedingly chaste and beautiful paintings, executed by young ladies, in some of our secluded valleys. The performances of one of the exhibitors, particularly the painting on ivory by Miss Bishop, manifested a high degree of taste and genius. Such is the powerful and salutary influence of these societies, evoking effort, cherishing improvement, and developing the latent intellectual, as well as physical resources of the county. We were only able to recognize these claimants upon our patronage by gratuities, but propose in future to embrace the fine arts in our programme of premiums. We were gratified by the appearance at our fair, of a delegate from Washington county; we regard these interchanges of civility and intercourse as highly important and desirable, and shall be happy to reciprocate the courtesy with other societies. The tendency of this intercourse will be the promotion of a mutual acquaintance and understanding in our farming communities, and a concert and harmony of action in advancing our common agricultural interests. It enables each to examine the practices of other sections of the State, their modes of culture, their management of stock and the qualities and varieties of their animals, and is calculated to excite an emulation and generous rivalry, not only in the success of our fairs but in all the pursuits of our agriculture.

The exhibition and practical operation of the Michigan sub-soil plow, in connection with other plows, was among the most important and attractive incidents of the fair. The novelty of its construction, and the vast power of execution it possesses, excited universal interest and attention, and we trust the event will lead to the immediate introduction among our farmers, of this most valuable and efficient implement. The society intend to urge by premiums, and all its influence, the introduction into the county of improved and labor-saving utensils.

On the second day of the fair, Amos Dean, Esq., delivered before a very large and highly interested and attentive audience, an eloquent address distinguished by a wide range of scientific and philosophical research, and replete with sound and judicious practical suggestions. The advance and prosperity of the society is illustrated by the annexed table, exhibiting its progress during the three years of its existence:

	1849.	1850.	1851.
Members,	123	145	273
Receipts from all sources,	$266 79	$374 59	$600 00
Premiums awarded and paid,	110 25	278 40	291 00

The officers elected for the ensuing year are as follows:

Winslow C. Watson, Chesterfield, President; Levi D. Brown, Elizabethtown, Treasurer; Robert S. Hale, Elizabethtown, Secretary, and 18 Vice-Presidents.

The financial condition of the Society as exhibited by the Treasurer's report to the Comptroller for the past year, is as follows:

Cash received from State fund,	$71 00
do do Fees of membership,	273 00
do do Percentage on entries,	109 00
do do On other sources,	147 00
	$600 00
Paid premiums,	$291 00
Paid incidental expenses,	145 32
Loss on bad money,	6 00
Balance in hands of Treasurer,	157 68
	$600 00

ONONDAGA.

REPORT. MOSES D. BURNET, PRESIDENT.

The Annual Exhibition of this Society was held at Syracuse on Wednesday and Thursday, Oct. 1st and 2d, 1851. The attendance was very large, and the competition quite spirited. There was an unusual display of live stock, larger probably than at any previous year of the Society's existence. The exhibition of this class took place on the grounds of Stephen Bastible, about half a mile east of the city, and when the next State fair is held here I hope you will be able to secure them for your use, and that they will then give all concerned as much satisfaction as their great adaptation gave both exhibitors and spectators at our own fair

The plowing match took place upon the same grounds, and though the committee selected a place that offered a severe test, yet quite a number of competitors entered their names, and much difficulty was experienced in awarding the respective premiums in this important branch of our annual exhibition. The double plow manufactured by L. Higley & Co., of Fayetteville, elicited the warm approbation of all who saw the work done by it.

The exhibition of fancy work, domestic manufactures, products of the dairy, and of most other articles that are usually exhibited on such occasions, took place in the large and spacious rooms of the Bastible block, directly in the heart of the city. The building was thronged by thousands and a charge of one shilling for admittance to all who were not members of the society, materially added to the receipts of the Treasurer. On the evening of the first day of the fair a large crowd was attracted to the spacious area of the Bastible block to hear speeches from the Hon. Caleb Lyon, D. D. Hillis, Esq., and other gentlemen. This new feature of the Society met with universal approval. On the following day the annual address was delivered before the Society by the Hon. Caleb Lyon, of Lyonsdale. The enthusiastic applause received during its delivery, was the best evidence to the orator of the appreciation of his elegant production.

The following persons were chosen officers of the Society for the ensuing year:

Seth Hutchinson, Onondaga, President; David S. Earll, Salina, 1st Vice-President; Julius C. Kinne, De Witt, 2d Vice-President; Davis Cossit, Onondaga, Corresponding Secretary; E. J. Foster, Syracuse, Recording Secretary; L. W. Hall, Syracuse, Treasurer.

The premium list for the ensuing year has been increased about two hundred and fifty dollars, and every thing connected with the Society wears a favorable aspect.

FULTON AND HAMILTON.

Report. A. Anderson, Treasurer.

The Annual Exhibition was held on the 7th of October, and the show was in the highest degree creditable to the farmers and mechanics of the county. The exhibition of stock, dairy products, domestic manufactures, fruits and flowers, showed the interest which is taken in each department.

The receipts of the society including balance on hand from previous years, was,	$181 74
Disbursements, premiums, and miscellaneous expenses,	159 17
Leaving balance,	$22 62

This shows an increase of about 25 per cent over the preceding year.

Some fine samples of butter were exhibited. Lucius F. Potter of Kingsboro, made in June, from the milk of three cows, 62½ lbs. of butter in addition to butter for the use of his family. Matthew Potter made 110 lbs of butter from the milk of twenty cows, in 3½ days, or seven milkings. No substance is used but pure salt in the manufacture, by the above persons; using from 1¼ to 1½ oz., Liverpool salt, to the pound of butter.

Mr. Mathew Potter's method of making butter:—The cows were fed on pasture only, and were milked about six o'clock in the morning, and about the same hour in the afternoon. The milk was taken immediately to the cellar and all strained together in a large tub, and while yet warm was dipped out into eight quart pans. A greater quantity of cream is obtained from the same quantity of milk when the pans are partly filled. For that reason the pans are only partly filled, viz., from one half to two thirds full. The cream was skimmed off as soon as the milk became thick, put in a stone crock, and permitted to stand until the next morning, when it was churned by a dog power. By letting the cream stand until the day after it is collected the butter made is much harder and more firm. The churning was commenced in the morning and usually took about two hours; when nearly done about two quarts of water were put in the churn. As soon as churned the butter was taken out, placed in a wooden butter bowl and immediately worked with a ladle and washed with cold water until the buttermilk was all washed out and the water came off clear. It was then salted with one pint of pure Liverpool sack salt to twenty pounds of butter, and thoroughly worked with a ladle until the salt was uniformly incorporated with the butter. It stood in the bowl until the evening, was then worked a little, then stood until the next morning, when it was again worked with a ladle until all the pickle came out, and was then packed in tub. The tub thoroughly washed and scalded before packing—no water used after the first washing and no substance other than salt.

Officers, 1852.—James Edwards, Ephratah, President; E. W. Prindle, Johnstown, Vice-President; B. H. Dewey, Johnstown, Secretary; Archibald Anderson, Johnstown, Treasurer.

GENESEE.

REPORT OF J. E. TOMPKINS, PRESIDENT,

In answer to circular of President of State Agricultural Society.

I am happy to respond to your note, but it is to me matter of regret, that the necessary sources of information from which to obtain satisfactory answers to your interrogations, on the interesting subjects to which you have directed my attention, are not within my reach. Indeed, such sources of information do not at present exist, and I cannot readily see how this subject can be reached, and such a desirable end attained, except by an *annual* report obtained from *each* farmer of the county, through the medium of the assessors; of the number of acres he has under cultivation, the quantity of land appropriated to each crop, and the result in each case, annually specified. Such a system, each year faithfully carried out, would furnish the necessary statistics, from which to determine the yearly and relative productions of each county with itself, and in the aggregate, would show a comparison between all the counties of the State; and thereby lay open to the observation of all who feel an interest in this subject, a fund of information, as interesting as it would be useful. These suggestions are made in hopes the subject may be deemed of sufficient importance to be laid before the Legislature the present season, in such a manner as to result in the passage of a law, that will secure annually, the report above named.

It is with diffidence I offer to you the result of my investigations which, for want of better helps, will I have no doubt, be as unsatisfactory to you as it is to myself.

1st. Wheat is the staple of our county.

2nd. This crop for the present year as a whole, is imperfect in quality and deficient in quantity. It does not produce by measure as many bushels from a given number of sheaves, and it falls short proportionably in weight, making a deficiency of one fourth the usual crop. This is, I think, to be attributed in part to the season, and partially to that exhaustion of soil, the unavoidable result of our mode of cropping.

3rd. "The condition generally of other important products." Corn has not been a remunerating crop this season. The highest estimate we feel authorised to make, is two thirds of a crop. Oats, barley and grass, were never more abundant. The potato, from fields long under cultivation, is in most cases badly diseased. On new land, recently cleared, this crop has in a plurality of cases, been as perfect this, as in any former year.

4th. There is each year, a few hundred acres added to those already under tillage.

5th. The stock of the county has been greatly improved within the last few years. The breed of horses has been entirely changed. The improvement in black cattle is progressing, the proof of which was abundantly evinced by the fine specimens of Durhams, Devons and grades, on exhibition at our late county fair.

6. There is an increased attention to scientific farming. Agricultural associations are formed in many of the villages in our county, the object of which is to meet at short intervals, and discuss subjects pertaining to agriculture and its correlatives. This disposition to investigate, and anxiety to test and adopt the improvements of the age, show conclusively that a new spirit has come over the mind of the community, and cannot fail to augment the wealth of the agriculturist, and raise the farmer in the scale of beings, and it is but honest to say, I consider these improvements as fairly traceable to the action of your State Agricultural Society, and smaller associations that follow in your train. And this revolution in the sentiments of the yeomanry of our country, are among the happy results of the many valuable periodicals that are put forth to aid, enlighten, and encourage the farmer, and foster the inventive genius of the mechanic.

7. Farms have increased 50 per cent. in value, within the last six years. A slight depression is felt at present in consequence of the pressure in the money market.

The same spirit and intelligence that have wrought the change in the stock of cattle and horses, is equally manifest in the improvement of sheep, swine, and domestic fowls of every description. Desirous of making this report approximate as near as possible to the exact condition and result of the various crops of the county, for the past season, I have obtained all the information that could be given by the supervisors of the various towns in the county, and by those men who traverse the county with machines to thrash the wheat. This, added to the investigations I have been able to make personally, and the intelligence obtained from other reliable sources, constitute the best report I am able to send you.

GREENE.

The Annual Meeting of the Greene county Agricultural Society, was held at the Hotel of C. L. Kiersted, in Cairo, on the 6th day of January, 1852: present George Robertson, President, in the chair; H. L. Day, Secretary.

The following named persons were duly elected officers for 1852.

President, Edward Johnson, of Durham; Vice Presidents, Geo. Robertson, of Windham, George Budd, Greenville, John Laraway, Prattsville, Joseph C. Tiffany, New-Baltimore, Cyrus Field, Durham; Recording Secretary, Horatio L. Day, of Cairo; Corresponding Secretary, E. B. Fenn, Prattsville; Treasurer, Stephen Hotchkiss, Cairo. Executive Committee, Albert Tuttle, Ashland, Alonzo Greene, Athens, Stewart Austin, Coxsackie, C. L. Kiersted, Cairo, Peter Dubois, Catskill, E. P. Smith, Durham, H. T. Miller, Greenville, Cornelius Hogeboom, Lexington, George Beach, Jewett, Stephen Steele, Windham, Marcus Beach, Hunter, Hezekiah Smith, Prattsville, and John F. Gritman, New-Baltimore.

The committee on resolutions presented the following, which were unanimously adopted:

Resolved, That the thanks of the Greene County Agricultural Society are hereby tendered to George Robertson, for the able and liberal manner in which he has discharged his duty as President of said Society. Also,

Resolved, That we present our thanks to the remaining officers, for the able and zealous manner in which they have discharged their duties in their respective offices.

The report of the Treasurer of the Society was made, showing a balance of $118 in his hands, belonging to the Society.

We have not been furnished with any detailed statement of the proceedings of the Society.

HERKIMER.

REPORT OF E. GRAVES, PRESIDENT.

The resources of this county, with its advantageous location to market, its salubrious and unequalled healthy climate, furnish advantages for more than ordinary progress in the science of agriculture. The developements which are being made in the farmer's pursuits have, in the minds of men who reason and deliberate, removed the false impression which has too long prevailed, that farming was almost a matter of chance, and that science had nothing to do in beautifying her fields and enriching her soil. With the great variety of soil which the farmers of Herkimer county enjoy, her products can always be made equal to any demands which her citizens may make upon her for sustenance and support. And while the soil contains the necessary qualities for growing grain, it is also well adapted to pasturage, and no county within the State could boast of better cattle, horses or sheep if the spirit of emulation equalled that of other counties. It is not to be doubted that the desire of the acquirement of agricultural information has increased within the last few years in a manner that is truly commendable, and has furnished proof of its usefulness by the extraordinary quantity and superior qualities of butter and cheese marketed from the county, and also in large exhibitions of fine horses and cattle which have been raised in the county by that class of the farmers whose desires were heretofore satisfied with an ordinary appearing horse or ox, if of sufficient strength and speed to perform the needed labor upon the farm, not taking into the account that the value of the animal remains undiminished by the labor which he is necessarily called upon to perform, or that the expense of raising an inferior cow, ox or horse is equal to that of raising one which will command the highest market price, and that the difference between the value of ordinary and extraordinary stock is a clear loss to him who is satisfied with an inferior article. This examination of the farmer's true interest has made our county fairs much more respectable, and will increase their usefulness as the farmer examines and consults his own judgment and experience in what will pay best with the least labor and capital invested. The county as well as the State Fairs have contributed to arouse the public mind to the importance of establishing institutions for the dissemination of agricultural science. The attainment of this object is of much more importance to the agriculturist than to any one else, and gives him an enviable advantage over any other occupation or employment, because it enables him to choose his soil which he will tax with the growth of his necessaries for life, and the luxuries for his table. Our fairs will soon become the public markets of the surplus stock and grain raised or grown, where competition will determine the value thereof with great advantage to the seller, and where the mingling of minds will elicit that truth which is so important to the judicious management of real estate, and which will make the husbandman not only master of his own business but the main pillar upon which State sovereignty must rest.

REPORT OF A. L. FISH, SECRETARY.

Herkimer county lies in the central part of the State of New-York, between 42 and 44 degrees north latitude; is bounded northerly by St. Lawrence county, easterly by the counties of Hamilton and Montgomery, southerly by Otsego county, and westerly by the counties of Oneida and Lewis. Its area is about 877,000 acres of land, the northern portion of which (bordering upon Hamilton and Lewis counties) is a cold, barren region, and but little improved for agricultural purposes. The central and southern parts of the county are diversified with narrow intervals on the streams and high and broken ridges and hills, most of which are cultivated to their summits, and are good grazing lands and are mostly used for cheese dairying. The interval lands on the Mohawk river and Canada creek are successfully and successively cultivated with wheat, maize, broom corn, &c. The ancient custom of building barns adjacent to streams so that the manure might be easily deposited on the ice in winter, and carried off by the spring floods, or on a rise of ground that they could be more easily moved away from the manure than the manure from them, has given way to a more laborious and economical practice of saving the coarse manures and applying them to the soil. It is found to pay well on the most fertile lands in the Mohawk valley, and most of the interval lands are so worn that a large crop cannot be relied on without manuring.

The upland portion, (which comprises the largest portion of the inhabited part of the county) although hilly and rugged in appearance, has a deep soil well adapted to a great variety of grasses, each of which in their turn (growing from the same sod) produce the flower of feed at different periods through the season of growing; to which capacity of soil the unrivalled success of Herkimer county dairymen is attributable. It is generally conceded by the most experienced, that our lands that are in good heart, and not too much worn by tillage, return the largest profit from cheese dairying. Hence it has become the staple product of the county. The southern towns are young in dairying, compared with some of the northern towns; yet a lively zeal is manifested in neatness and improvements in fixtures, which promise to vie with the oldest and most experienced. The town of Winfield was but a few years since, a grain, stock and wool growing town. It now has over one hundred dairies and two thousand and two hundred cows. Litchfield has ninety dairies and fifteen hundred cows. Some of the older dairying towns north of the Mohawk valley have a much larger number of dairies.

A strenuous effort has been made to ascertain by actual experiment the best and most scientific mode of cheese making; but I regret not being able to publish such facts as would shed new light upon the subject. Experiments have been carefully made to ascertain the comparative cost of cheese and butter. The rule is found to vary at different periods—in favor of cheese in spring and summer, and in favor of butter in fall. Poor milk will make from three to four pounds of cheese to one of butter, and milk will make cheese that will not make butter. Rich milk will make one pound of butter to two or two and a half of cheese. In the aggregate, milk to make one pound of butter will make three pounds of cheese—cost of manufacture nearly alike, generally in favor of cheese making. But the milk after butter is worth more to feed than whey after cheese. The fact that there are comparatively but few butter dairies in Herkimer county is good evidence in favor of cheese dairying; and the fact that some individuals sell their cheese from 25 to 50 per cent. higher in market than many others, is good evidence that all is not right; either the one is selfish and does not shed his light abroad or the other is slothful and does not seek the requisite information. Both are alike to blame; for I will venture the assertion that if every dairyman in the county should make as good cheese as the best now make, it would not lessen the price of the best cheese in market, but tend to increase a demand proportionate to the increase of product. If this view was generally entertained I trust we should have a better exhibition of dairy products at our annual fairs and a strife to become the greatest benefactor by shedding the most light.

The value of improved lands is estimated by their locality and productiveness. Such as are well located and capable of keeping a cow well the year round on four acres is valued at $40 per acre. It is a common way of renting dairy farms for tenants to pay landlords from $13 to $15 per cow for as many cows as the premises will keep well through the year—landlords furnishing all cows, fixtures, &c., except losses in stock that may occur from carelessness and neglect—the annual rent varying according to quality of cows, convenience of fixtures, condition of fences, &c. When such lands are let on shares, the tenant has half of all the product by paying landlord interest on one half the value of cows, paying taxes and bearing half the loss in stock; or has two-fifths of dairy product and half of all other products—landlord furnishing all the stock and fixtures and his relative proportion of contingent expenses of what is bought and sold again and not produced from premises.

Notwithstanding a constant depreciation in the productiveness of soils, increase of foul weeds, &c., the price of land is on the advance. Farms are frequently sold at an advanced price from a recent and former sale ranging from $30.00 to $60.00 per acre, owing doubtless to improvements in farming implements and travelling facilities. Most of the principal roads in the county leading to the shipping points on the canal and railroad are planked, which generally speaking favors the travelling public more than the pockets of the stockholder.

The principal points for shipment by railroad, are Herkimer and Little Falls; by canal, Illion, Mohawk, and Little Falls, at all of which points there has been shipped of cheese this season as follows:

At Illion,	1,501,988	lbs.
At Mohawk,	2,577,019	"
At Herkimer,	3,223,612	"
At Little Falls,	14,858,936	"
	22,161,555	"

The average price has been $6.00 per hundred pounds delivered in boxes at canal or railroad. A much larger amount of cheese has been sent to market during the last summer from this county than in any former season, amounting to about 20,000,000 pounds, and sustaining an average price of 6 cents per pound taken off monthly and semi-monthly.

Barley and oats are the principal grains raised for export; average yield per acre of barley, 25 bushels, and average price per bushel of 48 pounds, 68 cents; average yield of oats per acre, 35 bushels, and price per bushel, 30 cents; price of corn 60 cents, and average yield per acre, 30 bushels; price of peas, $1.00, and average yield per acre, 30 bushels; price of peas, $1.00, and average yield per acre, 20 bushels; price of beans, $1.00, and average yield per acre, 25 bushels; price of rye 60 cents, and average yield per acre, 16 bushels; price of wheat $1.00, average yield per acre, 15 bushels; pork, in the hog, from $5.00 to $5.50 per hundred pounds. But little pork is made for export. Many of the dairying farmers feed all slops and coarse feed to cows, and buy their meat and bread.

The practice of feeding cows prevails to quite an extent in the south part of the county, and it is believed by those experienced, that the whey from the milk of a cow fed to her through the season, will increase her product of cheese 10 per cent., making as much cheese as it would pork if fed to swine, and leave the cow in better condition to winter after milk season is past. It is also argued with some propriety that feeding sour whey to cows enters readily into the circulating medium and prepares the milk for a more thorough decomposition, can be coagulated with less rennet and make cheese less liable to swell or puff.

The practice too generally prevails of turning cattle into pastures and meadows, in the spring before they can get a fill of grass, and while the ground is yet soft and easily packed by the travel of cattle. The evils of this practice are two-fold. First: It creates a ranging discontented habit, that will cause cattle to travel more than is necessary to get their fill after grass grows in abundance, and such unnecessary labor and travel creates a demand for a greater amount of food than would be required with perfect quiet. Second: It should be borne in mind, that the roots of grass will not grow vigorously without leaves to aid them, and the circulation of atmospheric air in the soil. Consequently, if the first leaves that are thrown out by the roots in spring, to help them out of their crippled condition are grazed off, and the soil packed down by the travel of cattle to smother the roots, and exclude them from the circulation of air, they will be crippled for the season, and a light yield of grass will be the sure result. But if the first growth of leaves are left to nourish and sustain the roots, a thick coat of grass will soon be formed to lessen the evaporation of rich dews and refreshing showers, by the influence of bleak winds and the scorching rays of the sun; and when cattle are then turned to grazing, they will not crop the grass so close but that there will be a portion of leaves left to sustain the root. Let any who doubt the above theory, try the experiment for three years, and I will guarantee that they will save territory in pasture, enough to furnish good hay, if mowed, to keep their cattle in spring till grass is a full bite, and there will not be so much waste of flesh as is usual between hay and grass, and not so much poor cheese made at that particular season of the year.

Notwithstanding a strong conviction exists that manure is the main spring to increase and perpetuate the fertility of the soil, yet a great proportion, if not a majority of the most fertilizing qualities of vegetable products are allowed to waste without being incorporated with the soil, or applied to the growth of succeeding crops. Several manure cellars have been built in Litchfield and Winfield, to hold and keep liquid with dry manures, the result of which proves to be both profitable and convenient. It is the opinion of those experienced, that it saves at least one-half in quality and quantity of manure, and well repays the expense of building, while it keeps the manure in condition to be drawn out when required, without being bleached by rains, or over-heated by excess of fermentation which often occurs when kept in heaps, either of which is destructive and wasteful in the extreme.

The writer has used a cellar 50 by 30 feet, and 8 feet deep, which has proved sufficiently strong and perfectly tight, located under a stable for 30 head of cattle, all the droppings passing down through trap doors in the floor in rear of the cattle, serving as a place of deposit for every kind of liquid or absorbents, which, when combined, will make manure. The cellar is made with drains under walls 2 feet wide, and deep enough to drain off all springs that might press up through the bottom. The drains are filled with small stones, well packed; sides are walled with wall 18 inches thick, laid with common sand and lime mortar, then well pointed with aquatic mortar, and dried before use. The bottom of the cellar was made level, and then blue clay enough drawn into it to cover the bottom three or four inches thick; the clay was made wet, and trod down and well mixed by driving a herd of cattle around upon it; it was then made smooth with a hoe, and was water tight. A tier of plank laid down over the clay bottom admits of driving a team into the cellar when required.

A difference of opinion exists as to the best method of applying manure—some preferring to let the manure made during winter lie and decompose, and apply it in fall as top-dressing on meadow lands and fallows, because, as they say, it has a more immediate effect when well rotted; others prefer incorporating it with the soil in raw or undecayed state, so that the soluble and volatile properties may be disengaged in contact with the soil, either of which, like other general rules, has its exceptions. If it is the only object to push forward and mature the present crop, then well-rotted manure applied in a manner to yield the greatest nourishment at a period when the crop was best adapted to receive it, would be good practice, and of such manure it would be wasteful to apply any more than the crop would use up. But if the object is two-fold, (which it always should be with the landlord,) to grow a good crop and prepare the soil for a succession of such, it would seem to be the best method to apply manure so that its whole properties may be realized in a succession of crops. And I am convinced by observation and experience that most of the soil in Herkimer county is more permanently improved by pulverizing and incorporating manure in a raw state with the surface soil, than in any other way.

The kinds of grass commonly used for pasture and meadow, are timothy, red and white clover, and red top. June grass is avoided in seeding, but soon forms a good portion of the sod. White clover is also found in most of the soil in the county plentifully self-sown. The quantity of timothy sown per acre, is from seven to sixteen quarts; when mixed with red clover and red top, six quarts of timothy, four quarts of clover and four quarts of red top are mixed and sown per acre.

Raising clover seed was formerly a staple product in the south part of the county; but taking it from the soil after maturing the seed, was found to be an exhausting crop, and the business is wholly abandoned. More attention is given to fruit-growing than formerly. Those who began to give it attention seasonably are now realizing a rich and easy profit. The climate and soil is adapted to most kinds of tropical fruit.

Much improvement is manifested in neat stock, and the last exhibition of such stock was judged to he equal to that in adjoining counties; but this does not tell enough for Herkimer county. It is well known that our soil will produce more thrift in animals, and make better cheese than that of adjoining counties, and why not produce better animals? The question is easily solved; want of proper effort is the true answer.

Wool-growing has received but little attention for several years past compared with former years. Hops are successfully grown and large profits are made from a small area of land, not unfrequently amounting to $300 per acre.

The Annual Fair of the Herkimer County Agricultural Society, was held at Mohawk village, one day only, on the 9th day of September, 1851.

Treasurer's Report.

Amount receipts from members,	$249 35	
Other sources, State, &c.,	252 66	
		$502 01

Expenditures.

Paid for tent,	$160 00	
Premiums,	195 50	
Sundry other expenses,	161 04	
		516 54
Due treasurer,		$14 53

Statement of William Stewart, Esq., of Winfield, to whom was awarded the first premium on the best Dairy stock.

A. L. Fish, Esq.—Respected Sir: In compliance with your request I herewith send you a statement of facts relative to my herd of cattle as near as may be ascertained, which consists of twenty head in all, viz: six native cows, and fourteen grade cattle, eleven cows and three young heifers, the blood of which is from one-fourth to one-half Short horn Durham, from one-eighth to one-fourth Holderness, from one-eighth to one-sixteenth Devon, and from one-sixteenth to one-half Native, varying in the different animals of the herd—the native blood being from selected stock. I have the past season milked twenty-one cows, four of which were three years old. One which gave milk through the winter was reserved to supply the family with milk and cream, and the remaining twenty were kept in a cheese dairy, having the whey fed to them morning and evening, and until the first of June, one quart of meal (composed of equal quantities of oats and ears of corn ground) each at a feeding, and since the first of September, one quart of shorts each at a feeding. I commenced making cheese on the last day of March and made the milk up into cheese each day until the thirtieth day of October, having taken no more cream from it than has been necessary to supply a family of eight persons with butter; and on examining my bills I find that together with about twelve hundred pounds on hand not ready for market, I have made in the seven months a trifle over twelve thousand pounds as it has been weighed in market. My farming operations are limited, having only seventy acres of land to improve, the balance of the hundred being in the highway, yards and timber, the soil of which is mostly gravel resting on a limestone bed, with some ridges of slate, divided by ravines of loam or muck upon a clay sub-soil. I use timothy grass for meadow, and also for pasture with a very little clover, which are the grasses universally used for herbage in this town; on the interval and loam soils, timothy, on the sandy soils clover, and on slate and gravel the seeds of timothy and red clover are usually mixed, especially for pasture. By keeping this sized dairy, together with a team, and raising the heifers with which to keep my dairy replenished, on what land I occupy, with the cultivation it receives, I find that I must buy what flour we use in the family, and about half the grain that I feed to my cows. A few years since I planted out an orchard of a hundred and forty young apple trees of cultivated varieties, now just beginning to bear, which I think have been greatly benefited by the liberal application of muck to the soil, which is a sandy gravel resting on a limestone bed, sloping to the north-west. The use of gypsum on grass lands is quite general in this section, and evidently with results of benefit to the agriculturist. I have for a few years past practiced sowing about a bushel to the acre on my grass lands, both meadow and pasture, immediately after haying, and think that I get greater returns from it than formerly, when sown in the spring—the meadows especially producing better the next season.

At the Annual Meeting of the Herkimer county Agricultural Society, held at the court house, in the village of Herkimer, on the 5th day of January, 1852—the meeting was called to order by the Hon. Ezra Graves. The following persons were elected as officers of the Society for the ensuing year, viz:

President, Alonzo L. Fish, of Litchfield; Vice President, Dean Burgess, of Winfield; Recording Secretary, H. S. Clark, of Herkimer; Treasurer, Wm. Stewart, of Winfield. Executive Committee of six and a corresponding secretary from each town.

It was, on motion,

Resolved, That the Vice President be a member of the executive committee, ex-officio, and that the executive committee have the power to appoint the Judges on articles presented at the Annual Fair for premiums, and the committee of arrangements; also to fix the time and place of holding the next fair.

Resolved, That such crops as are not matured so as to be presented at the Annual Fair for premiums, be presented at the annual meeting, in January.

Resolved, That the next fair be held two days, and that the time of holding the same be fixed by the executive committee, between the 15th day of September, and the first day of October.

Resolved, That our premium list be increased by offering liberal awards for essays, on the best method of saving and applying manures: On the management of pasture, or meadow lands: On feeding and care of cattle during winter: On feeding and raising calves for dairy: On feeding and fattening animals: On the cultivation of fruit trees: On the cultivation of field crops: On the management of cheese and butter: On the best demonstration of the comparative cost of the different grains, demonstrated by actual experiment: On the comparative cost of keeping animals: On the different kinds of food, and different periods of their growth, and at maturity: A separate premium on high bred and native cattle: A separate premium on cheese, designed for shipment to a foreign market, and for home market.

Resolved, That the true interest of the cheese maker, and the society, will be best promoted by examining the entire dairy of the competitor at home, and that a committee be appointed for that purpose, whose duty it shall be to examine such dairies at the place of manufacture, and entire farms that are entered for premiums.

Resolved, That while we fully appreciate the advantages which society derives from the professional, mercantile, and mechanical employments, yet we regard the cultivation of the earth as the most important business, mentally and physically, for men.

Resolved, That the importance of the cultivation of the earth demands an exertion on the part of men equal to the happy result which always flows, when he seeks to do as well as the talent with which he is endowed by his Creator will permit.

Resolved, That we look with regret upon the unpaid toils of the agriculturist, who permits his fields to be covered with the thistle and the briar, and allows his barns and his sheds to harbor cattle, horses, or sheep, which will not command a respectable price, when brought to market.

Resolved, That we have witnessed the advancement of the interest of the agriculturist of the county in the establishment and highly creditable position of the Herkimer County Agricultural Society, and that it only needs a united and undivided effort in Herkimer county to enable us to compete with any county in the State, in the necessaries as well as the luxuries of life.

Resolved, That the proceedings of this meeting be published in connection with the transactions of the society the past year, and that a copy of the same be presented to each member of the Society, and that 200 copies be struck off for gratuitous distribution.

Resolved, That the thanks of the Society be tendered to Hon. Ezra Graves, for the interest and zeal he has manifested in the welfare of the society, and for the ability and fidelity with which he has discharged the duties of its presiding officer.

JEFFERSON.

REPORT. M. R. PATRICK, PRESIDENT.

The Annual Fair was held on the 10th and 11th September. On the 4th of August the executive committee resolved to purchase ten acres of land outside the corporate bounds of the village of Watertown, on which to hold the fairs of the society. The purchase was made for $100 per acre—the whole enclosed with a tight substantial fence, six feet high, and a building 60 by 30 erected for the purpose of exhibiting domestic fabrics, &c.

The days of the fair will long be remembered for the excessive heat which prevailed—yet, notwithstanding this intense heat, there were more than 10,000 persons present, and probably as fair a display of animals, agricultural implements and domestic articles as any county in the State showed in that month—not to speak of the products of the dairy, as they were allowed to speak for themselves. The following week at the State Fair at Rochester the premium for best six dairies of cheese from any county was awarded to the county of Jefferson.

I have the honor to report, further, that since the fair, some $250 has been raised by subscription and expended in the improvement of the society grounds, in stumping, grubbing, grading and preparing for the setting out of shade and ornamental trees early in the spring. Said moneys being raised for special purposes, and therefore not appearing in the accompanying report of the treasurer.

Lastly, I have the honor to report that the winter meeting of the society was held at Watertown on the 24th instant, when premiums on field crops and fruits were awarded, (as per statement herewith enclosed,) the accounts of the treasurer examined and audited, a delegation appointed to attend the winter meeting of the State Society, and our own officers for the coming year elected. They are as follows:

President, John A. Sherman, Rutland. Vice-Presidents, thirteen in number; Treasurer, Talcott H. Camp, of Watertown; Corresponding Secretary, John C. Sterling, of Watertown; Recording Secretary, Edward S. Massey, of Watertown; an Executive Committee of thirteen members.

Abstract of Treasurer's Report, Jefferson County Agricultural Society, December 24th, 1851.

Dr.

To payment for land,	$100	00
" Printing,	41	50
" Diplomas,	30	50
" Insurance,	1	68
" Premiums,	699	00
" Charges on books,	5	66
" Contingencies,	15	74
" Building,	400	00
	$1,294	58

Cr.

By balance on hand per last account,	$258	22
By cash received from State Treasurer,	183	00
" members and tickets,	709	71
	$1,119	93
Balance due treasurer,	$144	65

Field Crops.

Winter Wheat.—Phineas Hardy, LeRay, $31\frac{20}{60}$ bushels, on $9\frac{147}{160}$ acres; 314 bushels.

Spring Wheat.—Albert Rice, Adams, 35 bushels per acre.

Indian Corn.—Albert Rice, Adams, 375 bushels on five acres; one single acre of the field measured 122½ bushels.

Barley.—Albert Gurnee, Watertown, 45 $\frac{11}{48}$ per acre; 226 $\frac{5}{48}$ bushels on five acres.

Oats.—Robert Hardy, Rutland, 73 bushels, $\frac{9}{32}$ lbs. per acre.

Peas.—E. S. Salisbury, Ellisburg, 41¼ bushels per acre.

Beans.—Jeremiah Parker, Watertown, 41½ per acre.

do E. S. Salisbury, Ellisburg, 35 $\frac{2}{32}$ do

Statements, with proper certificates, as to measurement of ground and crops raised, accompanied the returns.

Extracts from the report of the viewing committee—Dairies, Butter and Cheese, Farms, and Nurseries.

The committee convened in the village of Watertown on the 20th of August, and proceeded from there northward, and, after having visited one farm, put up for the night at the house of one of the committee, Oliver Bartholomew, Esq., of Brownsville, to whom was awarded last year the highest premium on his farm. We took a slight view of this farm, and found it in every respect deserving of the premium awarded by last year's committee. The next morning, at an early hour, we were joined by the President, who, having recently exchanged the sword for the plow, and wishing to obtain some practical knowledge of Agriculture, accompanied us through our whole tour.

We continued our drive during the day through the towns of Orleans, Theresa, Antwerp, and Philadelphia, visiting several dairies, piggeries, &c., and passed the night at the house of Mr. Alfred Coolidge, who is an extensive and practical farmer, and has received several premiums for his enterprise and thorough mode of farming. Although Mr. Coolidge was not an applicant for a premium, we took a short stroll upon his farm, and found it in its usual productive state. A large and commodious barn and stabling attracted our particular attention, it being one of the best which attracted our view in our entire tour.

From thence we took a homeward direction through the towns of Leray, Pamelia, and into Watertown, when we separated for our homes, it being the close of the week. On the farm of Evelin F. Carter, in the town of Leray, where we remained over night, we examined an extensive apiary, containing some eighty swarms of bees, from which he will obtain some two thousand pounds of honey the present season, and for which he is offered one shilling per pound. Mr. Carter says he receives more net profit from his bees than from his dairy of some thirty cows.

We think, could some of those on the other side of the Atlantic, who have so *sneeringly* pointed out the Prairie grounds of cousin Jonathan, in the Crystal Palace, have accompanied us through this short tour, and seen what we have seen, the large fields of waving grain all ready for the sickle, the husbandman going forth upon *his own soil* with a strong arm and a willing hand to gather it into barns, the numerous herds and flocks leisurely feeding upon the green hills and the verdant meadows, the long range of tables laden with heavy cheese, groaning underneath the weight of their own fatness, or the dairyman's cellar filled with numberless tubs of golden butter, or could they have looked in upon happy homes and rural retreats of these our fair country-women, they would have exclaimed, this indeed is the promised land, the land which flows with milk and honey, the land of liberty and the home of the free.

On the following Tuesday, we again convened and started toward the south, passing through the towns of Hounsfield, Henderson, Ellisburgh, Adams, Rodman, Rutland and Champion, passing in all, through fifteen different towns of our county, visiting seven different farms, examined twenty-three dairies of cheese, fourteen of butter, and two nurseries, travelling some two hundred and fifty miles, and spending nine days of time. We were every where received in the most courteous and hospitable manner, all cheerfully imparting to us the knowledge derived from their own experience, and thankfully receiving all in ours to bestow.

In taking this tour the Committee saw much to instruct and admire, and some things to condemn and to reprove. The crops of grass, spring wheat, barley, oats and peas, are unusually large, and notwithstanding the severe inclemency of the season, were mostly secured in good order. Winter wheat, we found more or less injured by the weevil, (midge) and but little preparation making for sowing, this fall, farmers fearing to take much risk in that crop at present. The corn crop must range much below an average yield, through the southern portion of the county, it had attained a fair growth but was very backward, the late warm dry weather will, however, bring it forward rapidly. The potato crop, we were pained to observe, was unusually diseased, and, from present appearances, must prove almost a total failure. This blight or scourge of this most valuable vegetable being entirely beyond comprehension, we shall pass it without further remark. Fruit looked unusually well, most of the orchards we passed being in bearing condition, many, however showing a great want of care on the part of the owner for the want of pruning, cleaning, mulching, &c.

The committee were also much pained to observe upon the way side and in many fields, so many weeds and thistles, scattering with every breeze these pestilential seeds over the whole land. This, is all wrong, and within means of control. Although it is the duty of our overseers of the highway to see that they are cut twice in each year, and are subject to a penalty for each neglect, still that is almost entirely disregarded. It is quite useless for one farmer to mow and eradicate these weeds from his own farm while his neighbor suffers them to grow up and ripen unmolested. It should therefore be the duty of every man who owns an acre of land, to thoroughly purge these foul destroyers from his own farm, and the work is accomplished. There are many things which came under the observation of the committee of which we should be happy to speak, but time will not permit, and we shall mention but few.

Grazing and the manufacture of the dairy being the most profitable and legitimate business, a few remarks which experience has taught me, *first*: the cultivation of the grasses is an inter est which demands our most earnest attention. Great complaint is made amongst most of our farmers of the difficulty in keeping up their meadows, or they run out and want plowing up even in three or four years.

Feeding of Meadows.—It is the opinion of your Committee, and I am most fully convinced, both from experience and observation, that the *feeding of our meadows* either *fall or spring* is a great and very general fault. In the whole course of our tour we have seen but few farms upon which the cattle, the horses or the sheep were not permitted to trespass on the meadows, the consequence is, the roots are robbed of their natural covering and protection, and are left exposed to the chilling and destroying frosts of winter. The cultivated and more tender grasses, such as Timothy, and Clover are frozen out and the natural or more hardy June grass takes its place. Besides great injury is done particularly to new seeded fields in treading up, exposing the roots, and forming an uneven surface. The early feeding of our pasture lands is also a fault with too many of our farmers, it not only injures the pastures and keeps them short the whole season, but injures the stock which is permitted to roam over them, usually losing more flesh in the first two weeks that they are turned to pasture, than in the whole previous winter. I am moreover, fully of the opinion, that if we would reduce our meadows from one quarter to one-third, and not permit them to be cropped either fall or spring, that we should cut more grass from the two-thirds, than we now do from the whole, under the present ruinous system. That we should not only see two spires of grass where one grows now, but that they would grow more *tall* and *vigorous.*

Draining.—Draining is a subject which demands our attention. Much of our richest and most fertile lands are rendered almost useless, in consequence of water standing upon its surface, particularly in wet seasons like the present. On farms where stone is plenty, the best mode is probably in opening a narrow ditch two or three feet deep, place a course of stone on each side some four inches in diameter, and filling to the depth of one foot with loose stones thrown in promiscuously, a light covering of shavings or straw, and covered again with the earth thrown out. This forms a good and permanent drain, and will carry off all surface water if properly located. On farms where there is no stone, the open ditch is probably the best, until the brick tile which is so much used in England, can be prudently introduced.

Butter Dairies.—First in the manufacture of the dairy, *neatness* is indispensable to a good, sweet, rich-flavored dairy. Every article of use, from the milk pail to the butter tub or cheese cask, should be kept sweet and clean. If for butter, the room for sitting the milk should be protected from a southern or eastern exposure, either by trees or buildings as much as possible, should have a free circulation of pure air, not striking directly upon the pans, but let in either above or below them. No sink washings, barrels of sour milk, or pig-styes, should be in a position to impregnate the air with its poisonous effluvia, as it is as sure to affect the flavor of the butter as it is to enter the room into which the milk is set. Next in order is the skimming process, for which care and experience are required.

Goshen Butter—how made.—While in New-York, I have made considerable inquiry of the far-famed Goshen dairymen on this subject, and find them to differ much on this part of the process. Some churning all of the milk as soon as it is cool, others allowing it to remain in pans from twelve to twenty-four hours, and churning a portion of the milk with the cream, while the larger portion permit it to stand, until the milk loppers or becomes sour, as with us. But all agree that it should not stand beyond the point of change from sweet to sour, as the cream becomes bitter and of bad flavor, and a less quantity of butter is obtained. In churning, the all-important point is in having the cream of a proper temperature. Sixty degrees, probably, is as near the point as possible. After it is taken from the churn, the mode of separating the milk from the butter again, differs by different individuals, some using the hand or ladle, while others, and without doubt the better mode is the washing with pure cold water; this mode leaves it solid and in good condition for packing, while the former is likely to leave it *soft, salvy*, and in bad condition. In salting both the quality and quantity used, is very important; the kind most in use, and which your committee would unanimously recommend, is the fine Liverpool imported salt. This salt imparts a much sweeter and milder flavor than the salt manufactured from our own works. One ounce of this salt to a pound of butter ready for packing is about the quantity used by the best dairies. Many, however, being governed entirely by the taste, and using all that dissolves and no more. This is probably the criterion by which we can be governed. Last, but not least, is the manner and style of packing.

Packing, Butter firkins and Welsh Tubs.—Butter, in all our large markets derives its character from the style of its package. The Goshen style is the oak firkin with round hoops, and let it be made either in Orange, Delaware, Chenango, or Chautauque; if good and sweet, is *branded Goshen*, and sold in our southern or foreign markets for the same. The western or Welch style is the white ash tub, largest at the top, with cover and flat hoop. This style, the quality being equal, will bring as high a price, and is more sought for in the eastern market than the Goshen. It is, therefore, necessary, if you would secure the highest price in the market to carry out one of these styles. The latter style being most in use with us and that kind of package being most easily procured is undoubtedly the best. These packages should be of uniform size, not holding less than fifty lbs. each or over one hundred, should be made neat and smooth and kept clean as possible; if a buyer sees a dairy enclosed in neat strong packages, his first impression is that it is a good one, and I have often found it more easy to sell an ordinary dairy in good packages, than a good one in poor packages.

Cheese Dairies—Process of manufacture.—In the manufacture of cheese, the steam and common process is both used. And your committee are not prepared to give an opinion which is the best mode. The most important points are in keeping the milk sweet, setting and scalding at the proper temperature, salting correctly and pressing thoroughly. Among the best dairies we examined, the temperature for salting ranged for setting from 85 to 90, scalding from 100 to 110; salting by measurement with a common sized tea cup to 15 lbs. of pressed curd. The temperature for setting and scalding is probably very near right, but the description for salting is quite large as it depends much upon the state of the curd at the time the salt is put in; if the curd is not properly drained and worked down, the salt will drain off in the whey and leave the cheese too fresh which is a serious fault, and which nothing but experience will correct. The mode of working the curd or rather the first breaking up is very important. Some use a seive or tin cutter, while others break it up entirely with the hand. The latter mode is undoubtedly the best. This implement for cutting, leaves the curd smooth or glazed upon the surface and retains the whey within the particles and finally leaves the cheese porous and of a bad flavor, while the process of breaking with the hand leaves the curd in a loose and ragged state which permits the whey to ooze out freely and separate from the curd, and when properly pressed unites firmly and makes a sound, firm, mild flavored cheese, well adapted to the English markets as well as for home consumption.* The room for curing should be dry and of even temperature as possible; after the fermentation or curing process commences, it should not be checked by the sudden changes from warm to cold which our climate is so subject to. It is therefore quite necessary that a stove should be kept standing in the room, and a fire kept up at such times as is necessary to keep a temperature of 75 degrees. When packed for market care should be taken to have it dry and smooth, and whether in casks or boxes to fit snugly but not pressed in tightly.

State of the County in 1841.—In 1841, the first year of the reorganization of your Society, I was a member of the Committee which I now have the honor to represent, and took very nearly the same tour which we have the present year. The change, from that time to the present is so very great that you will indulge a passing remark by way of contrast. This change is more marked in the north part of the county than in the south. The improvement in roads, tillage and general appearance is far beyond what could have been anticipated; where then stood the log cabin of the early settlers we now see erected the neat and comfortable farm house, the stately mansion or rural cottage neatly enclosed and surrounded with fruit and ornamental trees, showing taste and comfort, which is not seen in some of the older towns of our county. On this side of the river although the change is not so marked, yet it shows that she is alive to the age of improvement.

Ten years ago this quiet inland town, around which it has always been our pride to rally, lay in comparative obscurity. We now see it, through the enterprize and zeal of its own native citizens, and from the ashes of the destroying element, rearing itself up in all the style, permanence and grandeur of some of our Atlantic cities. Then, the only mode of getting our butter and cheese, our pork and our grain to market, was up the lake to Oswego, from thence through the long line of canal to Albany, down the river to New-York, and around the coast to Boston, occupying from twelve to eighteen days in its transit, and suffering much from damage and change of market. To-day, by the opening of the railroad, our surplus products may be placed in the markets of New-York, Boston or Philadelphia, in from twenty-four to thirty-six hours. Surely, gentlemen, this is a great change, and how has it been effected? Is it through the aid of foreign capital, or any fictitious means? We answer no! but to the steady and persevering industry of our farmers, to our shrewd and calculating merchants and to the energy and skill of the mechanics of Jefferson county, is this great change to be attributed, and to them alone.

Farms.—But I pass to a brief description of the four farms to which premiums are awarded. Your committee have to regret that so small a number of farms were offered for competition, as we saw many in our travels which were worthy of examination. The model farm so much sought for by your former committees, we too have failed to find. But from the spirit of enterprise, which we could not fail to observe in many of our farmers, and from the liberal encouragement given by our society, we trust that we shall soon be able to find in almost every town in our county, *one or more* that may truly be called a *model farm.*

Education.—Model School House.—Education is also flourishing. The district school house, which a few years ago stood in our highway, small and uninviting in its appearance, is now giving way to those of more modern improvement, encased and surrounded with trees and flowers, undisturbed by the traveling public, and supplied with competent teachers. One which has drawn the attention of your traveling committees the past few years, could not fail to be observed by this, and we also made it a call. This model house is situated in the east part of our county, and known as the Eames District. For the past six years it has been under the instruction of Miss Cornelia Johnson, a teacher of most eminent abilities. Miss Johnson not only trains the young mind, in the pursuit of classical knowledge, but the art of cultivating the tender plants and flowers. This we feel to be useful and worthy of imitation. These young minds just budding into life and reality, are soon to fill the places occupied this day by ourselves. We therefore recommend that a diploma of our Society be placed in that school house, and dedicated to Miss Johnson, for her most praiseworthy exertions.

Farm of Loring Cooley.—The farm to which your committee has awarded the first premium, is owned by Loring Cooley, of the town of Rodman, and contains sixty acres of land, all improved, the soil, a slate gravel—well fenced with red and white cedar posts and boards, divided into five different fields of about equal size. Ten acres of the farm are under the plow, thirty in meadows, the balance in pasture. Mr. Cooley pursues a rotation of crops, the first year in corn, the second in spring wheat and barley, third in oats, and stocks to grass with eight quarts timothy and four pounds of clover. Plows to the depth of ten inches, heaps his manure in the yard where it remains till fall, when it is spread upon sward land, plowed immediately under and planted to corn the following spring. Has a young but thrifty orchard and a good vegetable garden. Barns and sheds in good order and well supplied with water, from a spring some thirty-five rods distant brought in lead pipe. Everything about this farm denotes thrift and good management; the farm implements were all housed and in good order; the team work on this farm is done entirely with oxen, which Mr. Coooley thinks is much cheaper and more convenient than horses. Every thing about and in the house was neat and comfortable, denoting good housewifery and in every respect an independent, peaceful and happy home.

Farm of R. B. Wilson.—The second premium is awarded to a farm in Watertown, and is occupied by Richard B. Wilson; contains 200 acres—135 under improvement; soil, black muck and gravelly loam. This farm is well and conveniently fenced with black ash rails, all staked and capped and put in a most perfect and workmanlike manner. Some 30 acres of low swamp land has been recently cleared at a great expense of labor, but which is done in the very best manner, having over 500 rods of open ditch cut through it, at a cost of 2s. to 3s. 6d. per rod, which causes it to be dry and productive. No weeds or thistles of any description were to be seen on this farm, either upon the tilled fields, the wayside or in the pastures. The barns, sheds and stabling are commodious and arranged in a most permanent and convenient manner. Water is brought from a spring some 70 rods distant, in a lead pipe, which supplies six different troughs in and about the building. A small expense of fixtures about the house, arranging the yard with a little more taste, attaching a good garden, and the planting of some fruit, ornamental trees and shrubs, would place this farm in a condition to compete for the first premium.

Farm of Wm. Scott.—The third premium is awarded to William Scott, of Henderson, containing 100 acres; soil, sandy marl with some clay. It is well adapted to the raising of grain, or grazing. It is fenced mostly with white cedar rails, staked and capped. It is divided into eleven different fields—containing from seven to ten acres each. Five of these fields are watered by an artificial stream taken out of a natural one, which passes through two others, which waters this farm in a most convenient manner. It has a bearing orchard, a good proportion of which is grafted. Also, a few bearing pear trees; a comfortable farm-house, barns and other necessary out buildings. Mr. Scott has resided on the farm some fifteen years. He came on with small means, and has paid $6,000 for land in that town. He has reared and educated a family of five children, two of whom he has settled on farms of fifty acres each. He has also purchased and paid for a small farm near the village of Adams, at a cost of $2,300, where he intends to remove, sit down quietly and enjoy the good of his labor. Mr. Scott is, in every respect a practical and money-making farmer—and has shown what can be acquired by perseverance and industry, in the tilling of the soil.

Farm of N. Coolidge.—The fourth and last premium, is awarded to Nathan Coolidge, of Philadelphia. This farm contains 210 acres—175 under improvement. It is in a good state of cultivation, and well fenced with cedar and black ash. Mr. Coolidge is this year engaged in arranging and repairing his barns, and making other improvements which will, when completed, place his farm among the A No. 1.

Mr. Goulding's Dairy Farm.—Your committee, although they did not find what they could quite term a model farm, had no difficulty in selecting a model dairy, *and also a model housewife.* These we found in the possession of Mr. Amos Goulding, of Leray. Mr. Goulding received last year the first premium on his dairy, and your committee of this season, with one accord, pronounce it to be superior to anything that met their view; and, in my own opinion, is fully equal to any Goshen I ever tasted. This dairy consists of only twelve cows, and had on hand, August 23d, 1,600 lbs., packed in 50 lb. tubs; adding one-third for the balance of the season, which is a fair estimate, will show a yield of 200 lbs. to the cow, over and above the use of the family; this, at 15 cts. per lb., a price at which Mr. Goulding said he had contracted, will show the proceeds from each cow, from butter alone, of $30. Here is a mark to aim at, both in quantity and quality. Everything appertaining to this dairy, in short, every article and place, which came under the care of Mrs. Goulding, showed the marks of system, industry, and economy; from the kitchen to the cellar, everything was the same, a perfect model of neatness and good housewifery. And we think Mr. Goulding's bump of order is not much less than that of his *better half*; for, without being invited, we took a look through his barns and sheds, and found them in the same order, and, as in the house, a place for everything and everything in its place. In consideration of Mr. Goulding's receiving a first premium last year, we deemed it not best to return it again this year; but would recommend the award of a diploma to Mrs. Goulding, for the manufacture of this superior dairy, and *pattern of good housewifery.*

(The *first* premium for the best 50 lbs. of butter made at any time during the year, was awarded to Mr. Goulding at the State Fair at Rochester.)

Cheese—Moses Eames' method of manufacture.—The first premium on a dairy of cheese, was awarded to Moses Eames, of Rutland. Mr. Eames has had much experience in the dairy business, and after much experiment and scientific research, has, in the opinion of your committee, made a superior dairy.

A statement of Mr. Eames' mode of manufacture is annexed:

I have 44 cows giving milk; some of which are young heifers. The cows are driven into the yard about 5 o'clock P. M.—and one-half are placed in stalls in a milking barn, and as fast as they are milked they are passed into another yard, and the remainder are tied and milked in the same manner. And as soon as all are milked, they are driven to the pasture, where they remain until morning. The milk as soon as drawn, is strained into a tin vat, around which is a wooden one, leaving a space of one inch between the two, into which cold water is left to run, through the night. This keeps the milk cool, and takes out the animal heat

In the morning the cream is taken off and the steam is let into the vats, until the whole is warmed to 88 or 90 degrees, when the steam is turned into a vessel containing cold water, which is heated for washing and other uses.

The morning's milk is added to the milk of the previous night, and the cream that was taken off, is then warmed and put into the milk. The rennet is then put in with the annatto, and the whole suffered to stand for one hour or more; then it is cut with a wooden knife into small pieces, and left to harden for 30 minutes. It is then carefully broken up by hand, and is again warmed to 94 degress, and left to settle for 15 or 20 minutes, the whey is then taken off to the curd. Then I commence to break it fine by hand, using a gentle pressure to separate the whey from the curd, and after it is evenly and finely broken, the steam is let on and the heat raised to 102 or 105 degrees. The whole is kept moving while heating. The steam is then taken off and the curd remains in the scalding whey for 30 minutes, or until the whole is sufficiently scalded, which is known by feeling or tasting. The remainder of the whey is then taken from the curd, and the curd is left to cool for 10 or 15 minutes; then it is taken into the sink, where the salt is worked in at the rate of one pound of salt to 50 of cheese, (the imported Liverpool salt.) It is then put into the hoop and pressed for 24 hours. A pressure is applied of from 7 to 8 tons weight to each cheese.

Nurseries.—The two nurseries examined, were both worthy of much praise and commendation. The one to which your committee have awarded the first premium, is situated about one mile from Watertown, south on the railroad, and called the Jefferson county Nursery and Garden. It occupies some six acres of land, and is well and tastefully arranged. It has some 50,000 trees of different varieties of fruit; besides a choice variety of ornamental trees, shrubs, roses, hedge plants, &c. The second is awarded to Edward S. Salisbury, of Ellisburgh. Mr. Salisbury has also a large and choice variety of fruit, ornamental trees and shrubs, which look well and thrifty.

Too much cannot be said in praise of the value of these nurseries, lately established in our county. Many are learning that they can raise good and choice fruit, with proper care and attention, where they supposed they could not. And these nurseries afford them facilities heretofore not found in our county; and we are happy to state that as taste is begetting itself in the planting of trees, our forests abound with a second growth of the sugar maple and elms, which want thinning out; and we say to you farmers *plant them*. Plant them around your dwellings, and on the road side, they will form shady bowers for those who may come after us. In short, if you would make your homes happy, and your children love them, adorn them with trees, with shrubs, and with flowers. Let them be watered and nurtured by the hands of our fair country women, and if we are not paid with dollars and cents in our pocket, we shall be doubly paid by the cheering smiles of our misses, our mothers, and our daughters.

In conclusion, permit me to congratulate the Society upon the *abundance of the harvest*, upon the prosperity of our society, our State and our nation. We are a link in that great chain which binds together all societies, kindreds, nations and tongues. And while we mingle our congratulations, on this, our happy festal day, may our hearts flow out in gratitude, to the Supreme Author and most bountiful giver.

JOHN A. SHERMAN,
Chairman of the Viewing Com.

Report of M. R. Patrick, President, in answer to the President's circular:

Sackett's Harbor, N. Y., December 15th, 1851.

Dear Sir:—Your circular letter of 4th ult., calling for statistics of Agriculture in this county, was received on the 10th, and communications immediately addressed to the superintendents of railroads, and collectors of customs at the various ports within the county, asking for statements of produce transmitted through these channels during the season

From some of these gentlemen, I have answers already, including the month of November, and *promises* from all. Lest my delay, however, be the cause of delaying you in making up your statement, I will answer some of your queries now, to the best of my ability, and when my ability shall be increased by the returns alluded to, I will forward a supplement.

1. Jefferson may now be regarded as a dairy county, decidedly.

2. And has increased its manufacture of butter and cheese, in a very considerable degree, within the present year.

3. Our dairymen allow from 2½ to 3 acres per cow, but the number of cows, or number of acres, employed in the business, I can find no means of answering correctly. As to the quantity per cow, there has been a gain within the year, and as to the *quality* of Jefferson co. butter and cheese, the records of the State Fair say all that is necessary.

4. Ours is not a wheat county, though we raise both winter and spring wheat for our own consumption, besides supplying our neighbors with limited quantities. The rye crop was very good, and so were oats, but corn unusually light, owing to the continued rains of early summer. Potatoes have felt the blight with us, less, I think, than last year. Within two or three years, more barley has been raised than formerly, and large quantities have already been marketed this season. In some parts of the county considerable quantities of maple sugar are made in the proper season; and our proximity to the lake, causes some of our small farmers to devote an acre or two of their land to the cultivation of onions, for the Canadian market. The failing of the corn crop has caused a corresponding diminution in the amount of pork made.

5. It is the opinion of those best acquainted with the county, that a greater number of acres are now under cultivation than at any former period.

6. Our dairymen keep the best Native cows that can be procured, as a general rule, with occasional dashes of blood from Canadian; but of late, some of our enterprising farmers are spending time and money freely, in the selection of pure bloods, both Short-horn and Devon, and one gentleman of our Society has just imported a cow and bull from Ayrshire. Of course, as the dairies

increase, a greater number are kept than at any former time. Of Sheep, we have only a few *good* flocks, but within the last 18 months some splendid specimens of both long and fine wooled sheep, have been brought into the county, and the process of improving the best flocks is entered into with spirit. As for swine, I can say that there are better hogs in my own yard and the yards of my neighbors, than I saw at Rochester last fall, but we have quite too many "racers" on every course in the county still. In my boyhood, the horses of Jefferson were unequalled in the State; but for some reason, the stock greatly deteriorated for many years, and it is only within some three or four years that improvement has again commenced, and our *young* horses promise nobly. Why are not *mules* used in this State?

7. We have *very few*, perhaps I might say *no scientific agriculturist* who is a *practical farmer* in the county; but when a few more years shall have passed away, the answer will be very different. We have *farmers* who are both *students* and *working* men, and these are the men on whom we must rely. I am no more a believer in the theories of the many agricultural writers than I am in the conservatism of old clodpolls who only tread in the exact steps of their progenitors; and I have seen much evil result from attempts to reduce unmanageable theories to practice. In this connexion allow me to say, that we should be extremely careful what *books* receive the sanction of our State and County Societies. I have, this day, had my attention directed to the subject, and a request made that I would introduce and recommend to the farmers of my county, a work that I have never seen, never heard of, and whose author is unknown to me. In this county a large number of agricultural papers are taken of late, and in passing through the greater part of its towns last fall, I observed that *they* were read and had been the means of introducing *other* works on farming.

8. To this question I am happy to reply. On an *average* through the *entire* county, farms have risen in value full 10 per cent. within one year. This may be attributed to the increased facility of market, which our railroads and plank roads afford, as well as to

the fact that capitalists are now opening their eyes to the vast mineral resources, agricultural capabilities, commercial advantages, and exhaustless water power within our boundaries. I should be happy to answer your questions more explicitly, but have not the data, and am myself a *tyro* in these matters. My term of office will expire next week, and I trust that my successor will know a little more of what he should do than the present incumbent. Your letter I shall turn over to him, and request him to give his views to you as early as possible.

LIVINGSTON.

Report. Charles Colt, president

The Annual Fair was held at Geneseo, on the 2nd and 3d days of October. The cattle show was attended by great crowds of our intelligent and enterprising farmers. The exhibition of stock in every department was very fine, surpassing in extent and quality any preceding exhibition within our county. The display of agricultural implements was highly creditable to our mechanics. Heretofore the exhibition in this regard, has been very meager, but an interest seems to be infused in our mechanics in exhibiting the works of labor-saving ingenuity. In domestic manufactures the ladies of our county pride themselves, and possess a laudable ambition to make manifest their works before the world. Much attention is being paid at the present, to the cultivation of fruit, and our fair evidenced that fact.

The receipts and expenditures of our society for the present year, are as follows:

Balance on hand from last year,.............	$37 10	
Amount received from State Treasurer,.......	122 00	
do for memberships,...........	275 00	
		$434 10
Paid for premiums awarded at the fair,.. ...	$218 50	
sundry accounts, repairs, &c., ...	195 60	
		$414 10
Leaving a balance in treasury of,...................		$20 00

There are yet some premiums to be paid and some books to be purchased.

The officers for the year 1852 are as follows: Robert Rome of Geneseo, President; Aaron Barber, Avon, H. E. Smith, York, and Samuel J. Mills, Mount Morris, Vice Presidents; Henry V. Colt, Geneseo, Secretary; Ephraim Cone, Treasurer.

MADISON.

REPORT. JAMES H. DUNBAR, PRESIDENT.

In again reporting the condition of the Madison County Agricultural Society, and of the agricultural interests generally in this county, I have a pleasing task to perform. There is no longer any room to doubt that the association over which I have the honor to preside, is doing a good and efficient work among our farmers, the necessity beginning to be felt for educated farmers. The improved appearance of the farms, farm buildings and fences, in our county, the many palpable benefits resulting from the increasing interest attached to the culture of the soil, the new and superior breeds of horses, cattle, and other stock, introduced, and the manifold specimens of mechanical ingenuity and ornamental taste and skill exhibited at our county fairs, are conclusive evidence of this fact. I very much doubt whether there is any portion of the State where within the last ten years a more marked improvement has been observable in all the departments of agriculture than here.

The financial condition of the society is perfectly sound, and shows cheering evidences of prosperity. Our receipts this year, including the last year's balance, have amounted to $805.24, while our expenditures for premiums, incidental expenses, &c., have reached $606.79; leaving a balance in the treasury, of $198.46. $21 worth of Cultivators and Transactions were awarded as premiums.

The eleventh Annual Fair and Cattle Show of the Society was held at Hamilton, on the first and second days of October. The weather was most delightful during the entire time, and the attendance from all parts of the county was unusually large. The managers of the society had resolved at this fair, to enclose the grounds and charge an admission fee of 12½ cents to all persons not members of the society, and some considerable anxiety was felt concerning the results. The system was found to work admirably, however, and brought into the Treasury the sum of $237.69. I have no doubt that the agricultural societies of all our sister counties would find it for their benefit to adopt this rule. The display of fine stock of the several varieties was far superior to any previous occasion of the kind, and the same might be said of the products of the dairy, together with the fruits, grains, and root crops exhibited. The ladies' department was also deserving of the high commendation which it received from all visitors. This has always been one of the most attractive features in these annual gatherings, and it is my earnest hope that it may long continue so, for I believe that it tends to benefit, in a higher degree than might at first be observable.

I shall not of course be expected to enter into any minute details concerning this exhibition, for to do so would require a volume. I can only speak of some of its most deserving features. Although the native breed of cattle is still the most common in our country, the Durham and Devon stock are rapidly increasing, and almost every thorough farmer has a cross of one or both of these breeds, while full blooded specimens of each are by no means uncommon. Many very superior Durham and Devon cattle, as well as grades and natives, were exhibited at the fair, by Messrs. S. P. Chapman, W. K. Porter, John B. Coe, J. Muir, sen., Alpheus Morse, J. D. Ledyard, D. Osgood, and many others. The two first named gentlemen are among our most enterprising breeders of Durham cattle, and within the past season have introduced many superior animals from the stock of Geo. Vail, Esq., of Troy. In the department of horses there has been a marked improvement in our county within the past few years. The display of these noble animals on this occasion, was unusually large and attractive. The most elegant breeds exhibited were the "Kentucky Hunters," "Morgans" and

"Eutaws." The superb horse "Kentucky Hunter," owned by J. Pope, and the Eutaw horse "Virginius," owned by Mr. W. Porter, fairly distanced all competition.

Of sheep, both of the fine and coarse wooled breed, there was a very respectable exhibition. The swine were also well represented; I wish to notice particularly a new breed of hogs, entitled Suffolks, introduced into the county by S. A. Gilbert, of Hamilton, and imported by Mr. Wier, of New-Hampshire. I think them very superior, and they may be crossed with our native breeds to good advantage. There was by far the largest and best exhibition of poultry ever seen at a fair in this county; I was gratified to observe what I did not before realize, that this was receiving its full share of attention from our farmers. The entire southern section of our county is peculiarly adapted to grazing, and I hazard nothing in saying, that there is no portion of the State, where there are better dairymen than here. The cheese of Messrs. Burchard, Hoppin, Morse, Sims, Rhoades, and many others whom I might name is always eagerly sought for, while some of our butter would compare favorably with the best productions of Orange county. The coarser grains generally succeed best in most of the towns of our county, though there are some fine wheat growing sections in the northern part. Considerable attention is paid to the cultivation of hops and tobacco, in some sections with good success. The farmers and gardeners of our county, are just beginning to discover that they can raise as good fruit as any of their neighbors. This fact was entirely evident by the unusually large and tempting display of apples, peaches, plums, grapes, pears, quinces, &c., seen on this occasion.

The silk growing interest was as usual well represented, and the specimens of mechanical industry and skill were numerous and creditable, but it is unnecessary for me to notice them at length. The second day was devoted to the plowing match, the address, the reading of the reports of the several committees, and the transaction of the ordinary business of the society. The address by Prof. S. B. Woolworth of Homer, was truly able and instructive, and was listened to with marked attention by a large audience. I cannot leave the subject of this fair without awarding to the citizens of Hamilton, and the ladies in particular, the credit which they eminently deserve, of having by their untiring exertions, materially contributed to make it what it really was, the most agreeable and interesting occasion of the kind, ever known in the county.

The subject of an agricultural college is exciting considerable attention in our county, and there seems to be a universal feeling in favor of the establishment of such an institution. The view which the society takes of the matter will be seen by the following resolutions which were unanimously adopted at its Annual Meeting, on the second day of the fair.

Resolved, That our county is emphatically an agricultural district, that when the farmer is morally and intellectually elevated, the country is elevated; that their prosperity is secured only by an intelligent and understanding bestowal of labor upon the soil we cultivate; that to secure this, the sons and daughters of the farmer should share the advantages of the higher branches of learning applied to their calling: that a share of the proceeds of the Literature Fund, should of right be bestowed upon the profession of the *farmer*. Therefore,

Resolved, That our members of the Legislature and Senator, be requested to use their most earnest endeavor to secure the passage of a law at their next session, providing for the establishment of an Agricultural college and experimental farm.

I earnestly hope that our Legislature will give an early and favorable consideration to this subject. Prof. Gurdon Evans, of this county, has done much for the past few years for the advancement of the cause of scientific agriculture among us. As an agricultural chemist he has few if any superiors. He is at present engaged in the preparation of an agricultural and geological work, accompanied with a map of every farm in the county, which I have no doubt will be a work of great merit and prove highly serviceable to the farmer.

Our grain crops in this county, except corn, have been universally good. Corn, owing to the unfavorableness of the season, has come in light, and the quality inferior. Potatoes were not affected by the blight as seriously as last year, and in some instances the crops have reached over 200 bushels per acre, which, considering the almost universal failure heretofore, is very gratifying to our farmers. No discoveries as yet to prevent the blight, though our county abounds with quack remedies for the disease. Where the best crops have been raised, farmers have been particular to plant the hardiest variety on rich dry land as early as possible after the frost is out of the ground, and a fair crop has generally been the result.

A few experiments have been made in wire fences, which I am happy to say is getting into favor on account of its cheapness and probable durability. I am inclined to think for inside fencing it will meet our expectations.

A recent discovery of a bed of shell marl, on the border of a natural pond near Poolville, in the town of Hamilton, is likely to prove a valuable acquisition to our manure heap. I am informed it contains about eighty per cent. of pure lime when burned.

In conclusion, allow me to say that the intelligent farmers of Madison county, convinced as they are of the utility of agricultural societies, will always heartily and triumphantly sustain the one among them.

Officers for 1852.—Elijah Morse, Eaton, President; Thomas A. Clark, Sullivan, Corresponding Secretary; Charles D. Miller, Peterboro, Recording Secretary; Alpheus Morse, Eaton, Treasurer.

GRAIN CROPS.–WHEAT.—MR. ATKINSON'S STATEMENT.

Bingley Mills, Cazenovia, Jan. 12, 1852.

MR. J D. LEDYARD, JR.—Dear Sir—I herewith send you according to your request, a statement of my crop of wheat. I sowed on the 12th day of Sept., 1850, on six acres of ground, eleven bushels of clean wheat. I harvested 225 bushels 37 pounds of wheat, (such as I herewith send you a sample.) In the piece was about three-quarters of an acre of wet ground, where I did not expect much wheat, but thought I would try the experiment whether by wet and frost it would turn to chess, according to the old farmers' tradition, which I never yet believed. But there *was no chess.*

Yours respectfully, WM. ATKINSON.

P. S. On the wet piece of ground spoken of above, there was not over six or seven bushels.

Mr. Atkinson attributes the excellence of this crop mainly to the liberal use of lime on the land.

JOHN C. TILLOTSON'S STATEMENT.

Amount of land, 4 acres. Amount of seed sown, 6 bushels. Amount of wheat raised, 155 bushels. The wheat was the Soules wheat, of a superior quality. J. C. TILLOTSON.

JAMES SIMS' STATEMENT.

Cazenovia, Jan. 12.

Sir—Being requested to furnish a statement of the amount of my wheat crop per acre, I send the following: Winter wheat raised on sward land, plowed once only, without manure. Yield, 31 bushels and 54 lbs. per acre. The Soules variety. Spring wheat sowed after corn. Yield, 28 bushels per acre. Black sea variety. JAMES SIMS.

TOWN ASSOCIATION, BROOKFIELD, MADISON Co.

REPORT. C. WHITFORD, COR. SECRETARY.

B. P. Johnson, Sec'y—Dear Sir: The undersigned gladly embraces this opportunity, at the instance of the "Brookfield Agricultural Society" to furnish you the following statement in relation to its doings. Our Society, as its title indicates, is a town organization, and was instituted and thus far sustained by individual efforts. It was organized in June, 1850—its charter and objects are set forth in the accompanying documents.

The results of said organization for the two years it has been in operation, have been of the most cheering and satisfactory character, clearly demonstrating the fact of the usefulness and efficiency of *minor* or *home* organizations in enabling our *farmers* and *artizans* better to prepare themselves for a favorable representation in our County and State Societies. The Society's account for the last year exhibits the following:

Received for membership,	$101 03
Paid premiums and expenses,	57 16
Balance in Treasury,	$43 87

At the last Annual Meeting the following officers were elected for the year 1852:

President, Elisha G. Babcock; 1st Vice-President, Dan'l Brown; 2nd Vice-President, Oliver B. Hinkley; Recording Secretary, Augustus L. Saunders; Corresponding Secretary, Calvin Whitford.

The Society have within the past year furnished themselves with a tent 30 by 75 feet, and fixtures, at a cost of $125.00.

MONROE.

REPORT. L. B. LANGWORTHY, PRESIDENT, in answer to the President's circular:

The principal crop grown and depended upon for market, is wheat; to which perhaps, nearly one quarter of the whole arable land is annually devoted. The next greatest items depended upon, are fruit, wool and pork. There is a surplus of Indian corn and potatoes raised; but generally speaking these are secondary objects. The breadth of wheat sown is yearly increasing; the clearing up and bringing lands into cultivation, particularly by draining and rendering arable; waste and new land is constantly advancing, as is the improvement of farm buildings, fences, and the substitution of *gates* for those miserable nuisances, *bars*.

The practice of deep plowing, is rapidly gaining ground among judicious farmers; but very little attention as yet, is paid to under draining, or to sub-soil plowing, in fact but few of our lands will ever require it, being a deep pervious soil, without a substratum of hardpan. It is becoming a very serious question, what our *stoneless*, *timberless* country, will in a few years have to resort to for fences. With our canals sweeping the country of wood for hundreds of miles, to supply the great towns, and the insatiable maw of the iron horse, steam boats, and the local motive power so rapidly increasing; which with the known improvidence of our people with the forest timber, renders the serious thoughts and attention of our yeomanry, the disquisitions of the press, and the exertions of the political economist, necessary to rouse the owners of the soil to the inevitable consequences of their carelessness on that subject. It is impossible for any individual to state with any accuracy, what number of acres are occupied with the great staple of this county, or the quantity produced; and it may be a pertinent question to ask, why the United States census does not embrace those facts, so important for forming statistical estimates; indeed, I can hardly conceive such are the facts, but have been so advised, and the public returns are not yet publicly promulgated. The quality of the crops this year is generally good; the wheat berry was fair, and harvested in good order; the yield was not as large as anticipated, owing to an over-produce of straw. The corn crop was rather late, but mostly ripened and sound; we had no frost to affect it till October. The potato crop was differently affected this year, from any period since the prevalence of the *rot*. The tops decayed earlier, and more generally than has heretofore been known, while those that rotted entirely disappeared, and those left generally sound, but undersized and short in quantity.

One thing may be taken as settled conclusively, that the disease is confined to the leaf and the elaborating and respiratory organs, and insects, if any, are the *effect* and not the *cause*. The tuber decays from immaturity of its components, an inevitable result from the destruction of the vines from any cause. Contrary, also, to its former action in previous years, the latest planted and latest varieties almost wholly escaped the epidemic. It is a curious fact if it is so proved, and there are several instances to thus far warrant the conclusion, that planting potatoes in alternate rows with corn, prevents the attack of the disease. The experiment is worth testing.

This county being a decided wheat growing region, and the entire tilable land, by a judicious course of rotation, wanted once in three years or less, for the plow, precludes the ability to have much breadth of land for permanent pasture or meadow, to sustain any great quantity of stock, over and above the farm and family wants, and therefore there is not that attention generally paid to the improvement of breeds, that the interest of every farmer demands. There has been considerable attention paid to the grade of sheep, but from the depressed state of the wool market, it is decidedly falling off.

The former introduction of the Berkshire and Leicestershire hogs, have altered the entire race. The shark and alligator breed have disappeared, and though far from being any thing *super*, they are respectable in size, shape, and disposition to fatten.

From the rapid increase of cheap agricultural works, and the *avalanche* of weekly and monthly papers devoted to this subject, the minds of farmers are undergoing a marked change, from the former prejudices against "book farming," and instead of relying on the moon, they are paying more attention to the plow and cultivator, and studying the nature, wants, and physiology of vegetable vitality—the nature and application of manures, and their production and protection. The value of farming lands are fast increasing, particularly in the neighborhood of towns and villages, or the great market thorougfares. The average market value of the entire county, not to include city town lots, is over fifty dollars per acre. Good wheat farms with proper improvements, dwellings, out houses, and orchards, are daily selling at from 60 to 80 dollars, and many much higher.

The strongest wheat soils in this county are inclining to clay, containing more or less gravel and a notable quantity of lime, and the other constituents producing the silicates necessary for the production of the wheat plant. Lime as far as the trial has been made produces no marked effect, and is not used as a dressing on any crop with any benefit; owing probably to the yet original redundancy of that material in the soil.

The only minerals of any value discovered in this county are *lenticular red oxyde of iron*, overlaying the old red sandstone of the saliferous group, varying from one to three feet in thickness, and yielding about 33 per cent of a middling grade of iron; and the plaster beds of Wheatland in the Genesee valley; the continual growth and production of which, is an anomally in geological science. These beds are situated near the surface in a strata of shaly lime stone, approaching to hydraulic lime, and are produced, as is conjectured, from the exudation of sulphurous gas from below; the strata commences expanding at a particular point, in the shape of a small mound, being the only indication where to excavate to find the article, and in a basin ten or twelve feet deep and as many in diameter, lies the whole formation for that point. This formation is often the result of eight or ten years action, and has been known to disturb the horizontal position of the corners of buildings. Sulphur springs are common, and in the town of Riga there is a burning gas spring, giving a small issue of carbonated hydrogen. Weak *salines* are frequent at the out cropping of the variegated red sand stone, along the shore of lake Ontario, which in early times were worked by the first settlers.

Officers for 1852. J. P. Fogg, President; J. H. Kelly, Recording Secretary; J. Vick, jr., Corresponding Secretary; J. Rapalje, Treasurer; W. Otis, E. S. Hayward, J. G. Rumsdell, Vice Presidents.

MONTGOMERY.

REPORT. S. SAMMONS, SECRETARY.

Dear Sir—The Montgomery County Agricultural Society had its Fair and Cattle Show on the 2nd and 3rd October, and much regret was expressed that your engagements had not permitted an address. There were more exhibitors, more and better stock, a greater variety of exceedingly well manufactured articles, and a larger general attendance than we have ever before had in this county. Among other things it was on motion of Teunis I. Vanderveer, unanimously resolved, that the executive committee be, and is hereby recommended before the time of holding the next State Fair, to procure a tent of such form and size as will be most suitable and proper for use at the yearly exhibitions of our County Society. That such tent shall be sent each year to the Fair of the State Agricultural Society, subject to the directions of the officers of the State Society, and to be known as the Montgomery County Agricultural Society's Home.

NIAGARA.

REPORT. ANDREW ROBINSON, PRESIDENT.

In making the annual return of the condition of the agricultural interest of this county, there is much satisfaction in being able to state, that the prospects were never so bright for a steady and rapid progress in all its branches.

The Annual Fairs, until this year have been invariably held in Lockport, and from some imaginary or real cause, many of the farmers became dissatisfied, and the prospects of the Society seemed to languish, so that it was hardly possible to raise funds to pay even a very moderate amount of premiums; for which cause the friends of the Society, as well in Lockport as other parts of the county, thought best to change the place of holding the annual fair; and after the manner of the State Society, to change the place of meeting annually from town to town throughout the county, wherever the necessary accommodations could be had. And as an experiment the Society voted to hold the annual fair of the present year at the village of Lewiston, and I am happy to say with the most cheering results. The town of Lewiston having raised by subscription a much larger sum than has been raised on any similar occasion, by which means we have been able to pay promptly all demands on the treasury, and have a small balance remaining for next year. And from the spirit and anxiety evinced to secure the location of the fair for the next year in different parts of the county, we have very good assurance that a spirit of emulation has been awakened that will continue to increase till our annual exhibitions will be sought and attended by all and every class, and esteemed the most useful and pleasant enjoyment of the year.

The Annual Fair for this county was held on the 15th, 16th and 17th days of October, in the park belonging to Stephen Powell, Esq., surrounded by a stone-wall about seven feet high, in which the cattle were shown, there being no room in the village of sufficient size and otherwise suitable for the exhibition of the various agricultural productions and manufactured articles. We erected a temporary building 24 by 72 feet within the park, which was well filled with rich samples of the various products of the farm, the dairy, the orchard, and the handiwork of the artist and the artizan, all showing a skill in the exhibitors that was highly gratifying. Woman was there too in all her loveliness, with specimens of her skill that were truly astonishing. The weather was fine throughout the three days, and the attendance was large and would have been larger but for the error of one of the county papers in noticing the place of holding the fair, which misled many of the farmers in the distant towns, and thereby prevented their attendance; still the exhibition of stock was larger than I recollect of seeing at any former exhibition in the county, and of as good a quality. There was some very good Short-horns and quite a number of Herefords, and many very good Native and Grade cattle. The show of working oxen was very good, far better in comparison than at the State Fair. Mr. Graves, of Porter, exhibited a Short-horn bull that he purchased at the State Fair in September last, and merits the thanks of the Society for his enterprise in procuring so fine an animal to improve our stock. The show of horses was also very good, and larger than on former occasions, among which was an excellent draught or carriage horse, imported from England in July last, by Stephen Powell, Esq. In sheep the show was good, both of coarse and fine wool. There was some very fine French merinoes, also South Downs and Leicesters that would do credit to any fair. The swine exhibited were a credit to their owners, some of which I think were superior to any exhibited at the late State Fair. The exhibition of fruit was very rich, exceeding any former show both in quality and variety.

The samples of field crops are very fine; wheat, (the staple of the county,) of the first quality, with a yield of forty-three bushels per acre. Corn, the most beautiful, with a yield of over 100 bushels per acre. Oats yielding $99\frac{28}{32}$ bushels per acre, and barley yielding thirty-nine and one-half bushels per acre. Fair specimens of roots were shown, except potatoes, which have been a very poor crop, and in some localities, almost an entire failure, on account of the rot, and where they have not rotted, the yield has been very light. In the early part of the season, they appeared to flourish, but about the first of August we had much rain, and very soon the tops began to turn black, and the potatoes commenced rotting. Nevertheless, some good samples were exhibited, as to quality, but of light yield. The exhibition in dairy products were not numerous, but the samples presented were very good. This county is much better adapted to the raising of grain, than for the dairy; still there is an improvement and an increase in that branch of business. There was also a fair exhibition of farm implements, of various kinds, and some very good specimens of domestic manufactures, with much of the ornamental that was truly beautiful, wrought by the fair hands of the ladies in such perfection as to almost rival nature. Finally, the exhibition in all its departments was well sustained, and there was evidence of an interest shown that augurs well for the future prosperity and usefulness of the society.

The judges having made their reports, on the afternoon of the third day, the society, for greater comfort and convenience, repaired to the Universalist church, where they were entertained with a most eloquent and appropriate address by Sherburne B. Piper, Esq., which was published by order of the society in pamphlet form, and very generally circulated throughout the county.

The society was then called to order; the secretary declared the premiums as awarded by the judges, and the society proceeded to elect officers for the next year, as follows, to wit:

Morgan Johnson, of Wilson, President; Moses C. Cropsey, of Lockport, Jeptha W. Babcock, of Somerset, Vice-Presidents; Reuben F. Wilson, of Wilson, Secretary; John Onderdork, of Wilson, Treasurer.

It appears from the treasurer's report, that the financial affairs of the society are as follows:

Money received of former treasurer,		$43 08
Cash received from the State,		93 00
Cash on voluntary subscriptions,		158 38
Received for membership,		90 82
Entrance fee to fair grounds,		66 53
		$451 81
Paid for premiums,	$300 75	
Preparing fair grounds, printing, lumber, &c.,	119 19	
		419 94
Balance in the treasury,		31 87

Report, of A. Robinson, President, in answer to President's circular:

Dear Sir:—Yours came duly to hand, but I have delayed answering in hopes that I would be able to collect facts sufficient to enable me to answer some of your inquiries with some degree of exactness, but I am sorry to say that I have been unable to obtain the desired information, and will therefore be under the necessity of sending generalities from my own observation, instead of a full and detailed account of the agricultural condition of our county. And in fact, for the want of that interchange of information, that should be among farmers, it would be impossible to give correct answers to all the questions proposed without incurring as much expense as it would require to take the the census of the county. I am anxious to give all the information in my power, for the benefit of the society, and regret very much my limited means of giving the desired information.

The chief products of the county are, wheat, corn and barley, in the order in which they are named. Wheat is the staple, and the cultivation of it increases every year. There has also been a large increase in the cultivation of corn and barley within the two past years, but it is not in my power to give the number of acres in the county, cultivated in either crop. The corn crop has not, on the average, been as good the past season as it was the year previous, in consequence of the wet weather in May, about the time of planting, which caused much of the corn to be planted late, and early frosts in the fall prevented it from ripening properly; still we have some very fine crops, with a yield of about 100 bushels per acre. The quality of the wheat, barley and early planted corn, is very good. Oats in some parts of the county are very good, bnt are not considered as profitable as either of the other crops above named. Hay is raised only for home consumption. Potatoes have diminished in the quantity cultivated, very materially, since the appearance of the *rot*, and some are fearful that they will have to be abandoned altogether if the disease continues. Other root crops are cultivated in some localities to considerable extent; I can not say that there has been much, if any, increase in the *number* of animal stock, but there has been a decided improvement in the breeds of horses, cattle and sheep, and a manifest spirit for further improvement. There is also an increased attention given to the scientific cultivation of farms, and an acknowledged need of science to enable the farmer properly to understand his profession, which I believe requires more thorough training and study than any other.

There has been a very great increase in the value of farms within two years, and the tendency is still upward, good farms selling from $60 to $100 per acre, where they could be bought two years since for $25 to $50 per acre. Fruit is largely cultivated in this county, and of the choicest varieties, and I believe, in a few years this will be one of the first grain growing counties in the State. It is yet comparatively new, and its resources have not been fully developed; but there is a spirit of enterprise in our population, which at no very distant day will cause Niagara county to take that station, which her rich soil and genial climate entitle her to.

ONEIDA.

Report. L. T. Marshall, secretary.

The eleventh Annual Exhibition of the Oneida county Agricultural Society, was held at Utica, on the 9th, 10th and 11th days of September, and, although the weather was oppressively warm, and the direct cause of deterring many from an attendance with their material for exhibition, the show was crowned with better success than was ever before attained by the society. This being the first exhibition ever held at Utica by our county society, the introduction was made most agreeable by the citizens of the place, by a marked degree of liberality evinced, in the extensive and ample arrangements for the exhibition.

Twelve acres were enclosed, after the manner of the *State Fair*, in close proximity to the business part of the city, and the material for exhibition sub-divided into four departments, arranged in appropriate halls, with the following appellations at each entrance: "Floral Hall," "Domestic Hall," "Dairy Hall," and "Manufacturers' Hall," which were well represented by the skill and productions of those of nearly all occupations and professions of the county. The plowing match took place on the first day of the fair, and although the ground was intolerably hard, (which was caused by the drought,) and the strength of the teams brought in close requisition, the plowmen performed their duties admirably. The exhibition of stock, (except swine,) was never better, and evinced a disposition on the part of competitors for improvement in the selection and breeding of good animals.

The Annual Address was delivered on the second day of the Fair by Hon. John A. Dix, familiarly known throughout the State for his good sound practical sense, and which was fully evinced on this occasion. The address was delivered under the society's large tent to as many thousands as could approach within hearing distance, who gave the best attention with intense interest.

The success of this society has been progressive. Each successive year since its first formation has added strength to its stability and usefulness, by an annual increase of its members and by a manifest increased interest throughout in all its bearings, both as a social institution and a potent agent in exciting an interest in the improvement of all the varied branches of industry. By the patronage of a small donation from the State, *a noble few individuals of the county*, on the passage of the law for the promotion of agriculture, immediately organized our county society, who by their zeal and fidelity, systematized its routine of operations, and were the first to carry into effect the intent and meaning of the law of 1841, by holding an exhibition in the following October, with great credit to the county and signal honor to themselves. Among that *noble few* none was more conspicuous or rendered more signal service in the cause they had espoused than the present efficient and worthy Secretary of the New-York State Agricultural Society, Col. B. P. Johnson.

I herewith submit an abstract statement of the treasurer's report, which shows the financial condition of the society:

Amount received of former treasurer, ...	$759 63
do do members, ...	660 00

Amount received for sale of tickets at fair, ...	$843 27
do do from State Treasurer,............	255 00
	$2,517 90
Amount of expense and premiums to Jan. 1, 1852,	1,130 08
	$1,387 82

Premiums awarded at Winter meeting.

On Winter Wheat.—To E. R. Dix, Vernon, for 86 bushels on three acres and 43 rods of ground. *Spring Wheat.*—To Charles W. Eells, of Westmoreland, 30 bushels and 50 lbs. per acre. *Barley.*—To Wm. Osborn, jr., of Marshall, 89½ bushels from 1 $\frac{7}{160}$ acres. *Corn.*—To Robert Eells, of Westmoreland, 79⅞ bushels per acre. *Oats*—To H. B. Bartlett, of Paris, 72½ bushels per acre. *Grass Seed*—To Charles W. Eells, Westmoreland, 6½ bushels per acre. *Winter Seedling Apples.*—To Eli B. Lucas, of Kirkland, for a beautiful sweet winter seedling; also, to Pliment Mattoon, of Vienna, for a tart winter seedling called Pie-Russet.

The following gentlemen were elected officers, at the Annual Meeting, for the ensuing year:

President, Amasa S. Newbury, Sangerfield; Vice Presidents, Horatio N. Carey, Marcy; Calvin Bishop, Verona. Treasurer, Roland S. Doty, Rome. Secretary, Levi T. Marshall, Vernon. An ex-committee of ten.

Report of L. T. Marshall, Secretary, in answer to circular of the President of the State Society.

Sir—In accordance with the request contained in your circular, I herewith transmit brief answers to your interrogatories, which are not gathered from statistical information, but from general information and observation, and perhaps not entirely reliable, but such as I may be permitted to suppose in the main, approximate correctness.

The chief agricultural production of Oneida county, may very properly be set down as hay and grass. As about three-fourths of the entire arable land of the county is occupied in the production of pasturage and meadow hay, for the purpose of producing butter, cheese, beef, and wool, although cattle and horses are reared to considerable extent, but in less proportions, doubtless, than the other commodities named. Perhaps no county in the State has a more diversified or mixed husbandry than that of Oneida. The northern portion of the county being devoted more exclusively to the dairying interest, while the southern is much less so. The best arable land being devoted to the production of corn, oats, and barley, but very little attention has been paid to the raising of wheat for several years past, on account of the destruction made by insects. But as those troublesome pests have in a measure decreased, there is of late beginning to be more attention turned to the cultivation of wheat, with remunerating returns. The chief product from the hay and grass produced, is that of butter and cheese, which is manufactured to a great extent, and generally by very successful dairymen, who obtain very liberal yields, which command the highest price in market.

The manufacture of both butter and cheese is pursued with much more system than formerly, and hence an increased yield and better article. The past season, from certain causes, has failed of producing the usual quantity from the same resources as the previous and former years, which is attributable to the drought of the middle and latter portion of the season. The usual quantity of butter produced by good dairymen upon grass alone, is about 200 lbs. per cow. While that of cheese is from 400 to 500 lbs. per cow. Those products can be increased by the use of *extra feed*, which is resorted to by many with profit. The average price of butter the past season, delivered on the canal or railroad, is about fourteen cents per pound, and that of cheese six cents.

The corn crop of the county forms quite an important item in our annual product, one half of which is used for home consumption, while the other portion is usually disposed of to distillers.

The yield of corn the past season was much below an ordinary yield, on account of the cold ungenial weather, in the early part of the season, and early frosts of autumn. Oats are raised extensively throughout the county, and many thousand bushels annually shipped to the eastern market. Barley is not raised to much extent, except in a few of the southern towns of the county, which produce a good article for malting, and which is generally used for that purpose. The towns of Sangerfield, Marshall and Augusta, annually produce about three hundred thousand pounds of hops. The town of Sangerfield alone producing one hundred and sixty thousand pounds. The average yield per acre, being about one thousand pounds, although some scientific successful growers produce two thousand pounds per acre, while others fall below one thousand. The income to the producers of hops in those three towns, the past year, at twenty cents a pound, (which is about the average price) amounts to six hundred thousand dollars for this particular product; although it is proper to state, that the price of hops for the past two years have ruled much above the ordinary rates. No farm product is more fluctuating in price, or attended with more expense in cultivation than that of hops.

Teazles, are also raised to some extent in those towns named, which find a market at our own and eastern woolen manufactories, at from seventy-five cents to one dollar per thousand, although the present supply seems greater than the demand, and hence they have become dull and unsaleable. About ten millions of teazles are annually produced in those towns, including that of Vernon, which lies adjoining those mentioned. Considerable attention has also been paid the past year, to the cultivation of tobacco, although it may only prove an experiment. The past season in this section, has been propitious to all farm crops, (except to corn and pasturage) as before stated.

As an illustration of the comparative product of butter and cheese, the town of Vernon presents the following exhibit, from the census of 1850, as taken by the writer, with much care and precision. From 1,904 cows, were produced 456,180 lbs. of cheese, 154,208 lbs. of butter, being upon an average 240 lbs. of cheese and 81 lbs. of butter from each cow.

There is doubtless an increase of lands under tillage, for all purposes including the cultivation of hay and grass; but for plowed crops there is probably a decrease of acres under tillage, as the *skim and skin process* is being done away with.

There is evidently an increase of animal stock in the county, especially that of cattle, with much less of indifference in breeding for both the *dairy* and the *shambles*, and also for their general good appearance. Much attention is also paid to the rearing of good horses; while sheep have become much diminished in numbers, on account of the low price of wool, and their place supplied by cattle; although the fine Saxons of Vernon are yet quite numerous, and seem to stand pre-eminent at our State and county fairs, among that class of sheep, while many other towns in the county sustain the reputation of the other breeds of sheep. There is evidently less attention paid to the production of good hogs, than any other animals raised in the county, which is to be regretted. There seems to be no settled criterion whereby to breed hogs, as being of the best breed. We have had many *jocose* and *witty* reports from the judges of the State Society, but none properly defining that which constitutes a *good hog*.

There is doubtless beginning to be more scientific attention paid to farm culture than formerly, which is probably aroused by the diffusion of intelligence through the potent aid of the *Press*, together with observations and comparisons made at our State and county fairs.

There is an increased price of farms in the county, but more particularly along our thorough-fares, plank-roads, cities, villages and manufacturing districts, which is attributable in an eminent degree to the domestic market afforded by the great manufacturing interests as well as by improved buildings, orchards, fruit gardens, ornamental grounds, &c., to which may be added an improved state of husbandry generally.

The central position of Oneida county, with the great thoroughfares passing through its center, and with its productive soil, extensive manufacturing establishments and facilities for market, bring to it advantages equal to those enjoyed by any other county in the State.

ONTARIO.

REPORT. E. M. BRADLEY, SECRETARY.

The Annual Fair and Cattle Show of the Ontario Society was held at Canandaigua, on the 1st and 2d days of October, 1851; and was by far the largest and best exhibition ever had in the county. The display of horses, cattle, sheep, swine, poultry, articles of domestic manufacture, and agricultural implements, was far better than we have seen at a county exhibition in many a year; and was an evidence of the growing interest felt in the improvement of our farms and farm stock. The concourse of people, on the occasion, was immense, and yet the greatest possible good feeling and order were manifest throughout the exhibition. Mr. John P. Norton delivered an address in the court house, on the second day, which was listened to with much interest. After the address, the following list of officers was chosen for the ensuing year: Harlow Munson, Esq., President; Henry Howe, Corresponding Secretary; Elisha M. Bradley, Recording Secretary. The winter meeting of the society was held at Canandaigua, February 10th, and was highly interesting. The attendance was much larger than usual, and a deep feeling manifested in the welfare of the society.

Premiums awarded on Grain Crops.—For the best acre of winter wheat, to E. M. Bradley, of East Bloomfield, 41 bushels and 31 lbs. per acre, on 5¼ acres. For the best acre of Indian corn, to E. M. Bradley, of East Bloomfield, 93 bushels per acre, on 5¼ acres. For the best acre barley, to J. J. Cobb, of Phelps, 58 bushels 21 lbs. per acre. 2d best, to Thayer Gauss, of East Bloomfield, 39 bushels and 40 lbs.; the committee recommended a premium of a Vol. of Trans. for the best acre of oats, to J.

J. Cobb, of Phelps, 73 bushels per acre; for the best acre of peas, to E. M. Bradley, of East Bloomfield, 44 bushels per acre; for the best one-fourth acre of white beans, to Nathaniel Smith, of Gorham; for the best acre of clover seed, to Henry Metcalf, of Gorham, 5 bushels per acre; for the best one-half acre of potatoes, to George Merrill, of West Bloomfield, 113 bushels; for the 2d best do, to George Merrill, of West Bloomfield, 97½ bushels. Premiums were also awarded on fat cattle and sheep.

Clover Seed.—The following is the statement of the cultivation and management of a field of clover of 22 acres and 17 rods, by Henry Metcalf of Gorham:

The field is rolling; soil clayey, with a mixture of sand and vegetable mold; previous crop barley, plowed and sowed in the spring of 1850, between April 15th and 30th, with barley, at the rate of two bushels per acre; seeded down with clover; sowed four bushels of clover seed mixed with one bushel of timothy, on the field, immediately after the harrowing in of the barley, and as soon as the barley came up, sowed on the highest part of the field one ton of Cayuga plaster, which was about two-thirds of it. Sowed on the remaining third, one half ton of plaster, (same as before used) in the month of November following—no other manure used. The first crop was cut for hay; commenced mowing the 23d of June, and finished about 9th of July. Commenced cutting clover seed the 8th of September, the seed was raked with a horse rake, and drawn into the barn; finished the 19th of September; commenced cleaning seed about the 1st of January, with one of Burrall's clover machines, and have cleared up one hundred and twenty-eight bushels, besides three or four bushels of screenings not included in the above statement.

HENRY METCALF.

Barley.—Two acres, 58 bushels 21 lbs. per acre, Jeseph J. Cobb, Phelps. The land upon which the crop of barley grew was nearly level; soil a gravel and clay loam; the previous crop potatoes, with about thirty-five loads manure from the barn yard; the cultivation for the barley crop was simply plowing once, about *ten* inches deep; seed sown broadcast three bushels to the acre, the harrow being passed over once each way after being sown; seed sown 10th May, without manure. The field is three feet above the level of the Canandaigua outlet; crop cut with a hand cradle, bound and set up in Dutch shocks; thrashed with machine with separator. Harvested the 30th July; thrashed September 1st; cleaned, measured in a sealed half bushel, and found to yield 110 bushels by measure; one bushel weighed 51 lbs., making in all, by estimation, 116.42 bushels of good merchantable two rowed barley, being 58.21 bushels per acre, (two acres being sown.)

Expenses of the crop, for putting in, harvesting and thrashing, was	$20 00
Value of the crop at 80 cents per bushel,	83 20

Leaving net profit $73.20, or $36.60 per acre.

JOSEPH J. COBB.

The statements were duly verified in these cases by the affidavits of the grower, surveyor and persons who harvested, measured and weighed the crop in each case.

Extracts from the address of Mr. Harlow Munson, President of the society, delivered at the Annual Meeting, February 10, 1852:

This society was organized in 1840, and has had twelve public exhibitions of animal stock and fairs, and awarded premiums to the amount of more than $5,000, and caused an expenditure of more than three times this sum in time and money, in attending the meetings and fairs. For the expenditure of this $20,000, the farmers should have been benefited, the cause of progress should have advanced and we should have acquired and diffused some information in that branch of business which is confessedly in need of these exertions and has undoubtedly received aid by them. But whatever advantage this association has been to us, it is both useful and proper for us to ask, can we make it more productive of good or can we increase its benefits by any acts of ours.

The objects of the society as expressed by its originators is "the elevation and improvement of agriculture." One of the means employed for the promotion of this object is to offer premiums to the most successful cultivator of crops, and to the owner of the best samples of animal stock, as well as the best specimens of domestic manufactures. I would suggest, when any meritorious article is exhibited, a particular account of the means employed for its production, should be had, and kept on file, or put on the records of the society, and the publication of such information might help promote the object of our organization.

Improvement of the Breeds of Cattle and Sheep.—May we not with advantage, encourage the application of science to the improvement of domestic animals. We now give premiums to the owners of the best animals, let them obtain them as they may. This is well. But would it not be good policy to encourage directly their improvement in breeding, that is, that the progeny may be superior to the progenitor; or in other words, offer encouragement to that system of breeding that shall tend to improve the animal in the valuable qualities and reduce the objectionable ones, as in the sheep, retaining the heavy fleece and improving the quality, or retaining the fine fleece and improving the weight, and thus producing what is said cannot now be found; a very fine and very heavy fleece on the same sheep. As for the cow much remains to be done to establish a race of good milkers. It is true the production of such results as hinted at is of itself a sufficient reward.

I believe the society has yet done nothing to produce or encourage directly scientific breeding. If those men engaged in the work can be induced to come here and exhibit their productions, it might help to advance the enterprise and diffuse the knowledge among the many now in the possession of the few. Well regulated and carefully conducted experiments are a source of vast and valuable information, and this society might do much to produce and disseminate knowledge obtained from such trials. Every means in our power should be used to acquire information of practical advantage to the agriculturist, and having acquired it give it currency, this being one of the chief advantages of our agricultural organizations.

Town Associations.—To this fact those persons who are members of farmers' clubs or town societies will bear witness and endorse the assertion, that the free interchange of ideas in conversational meetings is the means of calling out much interesting and practical information. I do not propose to give an essay on the value of agricultural associations, but cannot refrain from recommending to those towns that have not formed such societies, to try them. It is not convenient for the county society to hold these conversational meetings, but we can meet once a year, and exhibit the products of the knowledge obtained from them, and the various other sources within our reach, and if towns, as well as individuals, should become a little emulous it may not work us great injury.

The spirit of the age demands progress in Agriculture.—The spirit of the age demands from us activity, and the fact cannot be disguised that progress has laid her hand on our cause; and those who do not heed her spirit's influence may wake from their Rip Van Winkle slumbers and find themselves dozing over the history of the antiquated "Bull Plow," or engaged in the project of moving a barn to avoid the accumulating manure, while our more fortunate cotemporaries are regaling themselves over the report of the commissioners of the Industrial Fair held in the city of New-York, 1853, or the report of the Agricultural College and Experimental Farm of this State, besides receiving "substantial aid" in the improved condition of their finances. Fortunately for our cause the number of the latter is far the most numerous and fast increasing.

Fat Cattle.—It is thought that there might be made a change in the time for the exhibition of fat cattle; this is a subject worthy candid consideration, as well as that of changing the place of holding the annual fair and cattle show. Those who have watched the commercial transactions of the country, may have noticed an increased demand for fresh meats, and that the increased and increasing facilities for getting our products to market will probably work a change, requiring foresight on the part of the producer to meet.

Agricultural Survey.—If an agricultural survey of the county could be had, as taken by and under the direction of the State Society, much useful information would be obtained, and many important facts embodied in a statistical form, that would be highly valuable to those desiring such information. This subject is earnestly recommended to the consideration of this meeting. I have hinted at but few of the many subjects that may, and ought to engage the attention of this society, but enough to show that a large field for its operation is open before it, in which to make itself useful if rightly directed; and it remains for us to say whether we will enter this field with a determination to work out the result. The county of Ontario has a soil as fertile and rich in the elements of agricultural productions as any county of Western New-York, and should not be behind any of her sister counties in the display of her products at her fairs and cattle shows; and every farmer should feel bound by every consideration of patriotism, self-respect, duty to posterity, and, above all, an unconquerable determination to elevate the cause of agriculture to that eminence, among the callings of men, that she is destined to reach when her friends have done their duty, and science and knowledge have performed their promised work. This eminence is to be reached by communities, or individuals, only by the thorough application of the means within their reach to procure information, and a persevering industry in its application to practical and profitable determinations.

Improvement of Stock.—Thorough bred animals.—The meeting then took up the subject of premiums for the ensuing year.

Mr. John S. Bates made some highly interesting remarks upon the importance of improving our farm stock, and of the necessity of introducing some thorough bred animals, and moved that the society award premiums on improved stock. Similar remarks were also made by F. Bradley and others.

Mr. Wm. D. Dickinson, of Victor, spoke with much interest on the subject of improved stock of all kinds; and remarked that his attention had been turned to the growing of wool, and to the improvement of his flock in this particular. Mr. D. stated that his flock last spring yielded an average fleece of 4 lbs. and 10 oz. per head; and had for the past four years given an increase annually of 4 oz. per head.

Mr. Bates remarked, that perfection in all particulars was not to be found in any one breed of animals, and hence the necessity of introducing choice specimens of the different breeds; and moved that a committee of five be appointed to perfect a list of premiums on farm stock.

Report of H. Munson, President, in answer to circular of President of State Society.

Dear Sir—Your letter to the officers of the Ontario Agricultural Society, asking information on certain important subjects relating to the condition of agriculture in this county, was handed me on the 8th Nov., but a press of business, and a little time required to look about to see if the means of giving correct information lay within my reach, has prevented an earlier reply. I regret to say our society has not the means of furnishing the desired information. It has long appeared to me that county societies should collect and keep for after reference many such important facts, and hope we may have energy enough to do something of the kind in future. The answers I shall make will therefore be from personal knowledge on the subject, and of course will not be as valuable to you as if taken from some more reliable source, or as the opinion of individnals who have been longer engaged in agricultural pursuits.

1. The chief or staple product of the county is wheat.

2. This year it has been a decreased crop, owing partly to the season—a large growth of straw, but the heads not well filled. Another reason for the decrease is the ravages of the wheat midge,

which has damaged the crop in the eastern and middle parts of the county. The western part has not yet suffered as much by its ravages.

3. I have not the means of knowing the number of acres occupied by the culture of our staple, or the number of bushels per acre, any more correctly than given by the census taken by the State and the United States. My opinion is, the average yield per acre has been on the increase for the last five or ten years. The quality is not probably excelled by any other county.

4. The condition of other important crops is generally good. Indian corn, barley, and oats are cultivated to a fair extent, and the average yield may be considered on the increase.

5. I have not the means of forming a correct or reliable opinion of the increase or diminution of acres under tillage for all purposes.

6. The number of animal stock may not have increased, but there are more of the improved breeds kept at present than formerly, such as the Short-horn Durham, Merino sheep, and some desire is being felt to obtain the mutton sheep, the New Liecester, and South Down.

7. I am happy to believe that scientific cultivation of the farm is on the increase. As evidence of this, the number of subscribers to and readers of agricultural publications is on the increase; in some of our towns farmers' clubs are formed, and town fairs and cattle shows are held, which would seem to indicate that the desire for information and improvement is becoming more general among the farming portion of our county.

8. The value of farms has for the last few years been on the increase.

I have to regret with humility the want of information sufficient to answer the 3d, 5th, and 6th interrogatories, but hope it will be the moving cause of putting our society in the way of obtaining the facts.

ORLEANS.

REPORT. ASAHEL BYINGTON, 2ND, PRESIDENT.

Orleans county is situated between the 43d and 44th parallel of north latitude. It is about twenty-four miles long, from east to west, by eighteen broad, embracing an area of 432 square miles. A very small portion of it can be considered waste land. The favorite and staple crop is wheat, and the amount yearly grown, when taking into view the area of the county, is exceeded by no other county in the State. It is also well adapted to the production of corn, oats and grass, and clover comes in not only as a part of a system of rotative husbandry, but often as an alternating crop with wheat.

The ridge road passes through the county near its center, from east to west, making a natural division. The portion of it north of the ridge may be termed level, though there is sufficient descent to admit of the egress of surface water, which is principally effected by open drains. The southern portion of the county, though it cannot be denominated hilly, is more uneven; the soil at the margin of the declivities often being springy, and basin shaped depressions of the surface frequently occur, producing an accumulation of surface water unfavorable to any crop, and fatal to a crop of wheat. A judicious system of underdraining will remedy these evils, and what is creditable to the enterprise of our farmers, it is already commenced.

The influence which altitude and contiguity to large bodies of deep water, has upon the climate of a county is favorably felt in this county. Its northern border reaches the shore of lake Ontario. The area of the lake is estimated at 6,300 square miles, its average depth at 500 feet, its level above the ocean at 232 feet, and the elevation of the land above the level of the lake, probably does not, in any place within the county, exceed 300 feet; all of which circumstances combined, give it an equability of climate unknown to other portions of the State not similarly situated, and in regard to its lowest mean temperature, it would compare favorably with some portions of the county three or four degrees further south. The county is also exceedingly well adapted to the production of fruit, and from the causes above alluded to, it is frequently saved from frost, when in the southern part of the state of Ohio, it is cut off.

The past season has been wet and the temperature low, consequently unfavorable to the growth of a crop of corn, which is poor, while the crops of oats and grass are unusually good. Wheat is a medium crop. The county of Orleans has been redeemed from the forest within the last forty years. Settled for the most part by men whose only capital and patrimony was a good constitution involving the outlay of a great amount of labor prior to any return from the land, with sickness incident to a new country, the only resource to maintain life under such circumstances was to tax the resources of the soil to its greatest extent, and a process of skinning and exhaustion was for a time the result. But a different and a better state of things for the last ten years has been exhibiting itself. A greater depth in plowing, a better husbanding of the materials for manure, the introduction to some extent of the principle of rotation in crops, the keeping of more stock, have all had a tendency to increase the productiveness of the soil, and though we have many good farmers who are not members of the agricultural society of the county, yet we cannot but impute much of the improved state of agriculture to its influence.

The Annual Fair for the current year was held in the village of Albion, on the second and third days of October, at the ground and buildings of the Lockport and Rochester Railroad Company, the depot being appropriated to the exhibition of articles of domestic manufacture, which was filled in a manner creditable to the fair ladies of Orleans. The exhibition of domestic animals was not large but good.

The plowing match took place on the morning of the 2d day, and elicited a more than usual degree of interest; a three horse team was for the first time seen at our plowing match, and was required to plow an increased depth of furrow, proportioned to greater strength of team. The annual address was delivered by the Hon. Alfred Babcock, on the afternoon of the second day of the fair, at the court house, to a full and attentive audience; after which the reports of the several committees were read.

The officers elected for the current year, are President, Asahel Byington, 2d; Recording Secretary, John G. Lawyer; Corresponding Secretary, Noah Davis, jun.; Treasurer, Thomas L. Clark; and a Vice President from each of the nine towns in the county.

Balance on hand at the commencement of the year, ...		$63 65
Amount paid by members of the Society, ...		155 00
Received from the State, ...		75 00
		$293 65
Amount paid in premiums, ...	$150 00	
Miscellaneous expenses, ...	27 72	
		172 72
Balance on hand, ...		$115 93

Report of Committee on Farms.

The committee on farms for the county of Orleans, for the year 1851, are Jonathan Edgecomb, Horace W. Chaffee, and Oliver M. Barber; and as one of that committee I deem it my duty to give a brief statement of our local position, soil, and products; and also to give the name of every town in the county, with the names of some of the best practical farmers in each town; and should this communication find its way into the Transactions of the State Agricultural Society for 1851, all persons receiving a volume, will find the name of some prominent farmer in each town to whom he may address a letter, and obtain any information he may desire for the furtherance of the best interest of agriculture; and should a similar report be made from every county in the State, I am of opinion much benefit would be derived to the public.

The county of Orleans is bounded east by Monroe, south by Genesee, west by Niagara county, and north by Lake Ontario.

That part of the county bordering on the lake, and for five miles south of it, is mostly a clay soil; there are some fine sandy and gravelly ridges, and it is the best wheat growing district in the county, (and we hazard nothing by saying that this range of country bordering on the lake, from the Niagara river to the Genesee, is the best wheat-growing region in the State.) Immediately south of this range and north of the great ridge road, (from Rochester to Lewiston,) is a tract about two miles wide, of a gravelly loam, with some swales of deep black muck; some portions of this range are very stony and moist, and it is all well adapted to grass.

Directly south of the ridge road, is a beautiful range of country two miles wide. The Erie canal wends its way across the county through this range, and for one mile south of the canal is the best horticultural district in the county; south of this, including the residue of the county, south and east of Albion, the country is variable, being as well adapted to grass as to grain. The central and southwest part of the county contains much uneven, sandy, and gravelly loam soils, with quite a rolling or undulating surface, and is well adapted to wheat and corn. From two to five miles south of the canal, is a limestone ridge, being a continuation of the Niagara Falls and Lockport ridge, which partially terminates at the Genesee Falls, at Rochester.

The town of Kendall is the north-east corner town of the county. The farmers which I shall name in this town are David Jones, esq., Alanson Whitney, Jacob Lawyer, Cyrenus Wellman and Abraham Odell. In Carlton, William Ross, Ezekiel Day, Silas Warren, Orrin Anderson, William Williams, Gardner Gould, and Asahel Byington, 2d, president of the county society. In Yates, Cyrus Clark, Barrick H. Gilbert, James Barry, Charles Lum and Andrew Weld. These three towns lie along the lake shore, and comprise a delightsome range of country. The next range of towns lie on the great ridge road from east to west. In Murray, Moses Stoddard, Daniel Reed, Jonathan Church, Abijah Reed, Cornelius Thomas. In

Gaines, Samuel Hill, John Proctor, William J. Babbitt, Benjamin Chester, Oliver M. Barber, Palmer Cady. In Ridgeway, Hon. Lyman Bates, Silas M. Burroughs, Chauncey Brindsmade, Orrin Scovil, Lewis Marshall. In Clarendon, Benjamin Pettengill, David N. Pettengill, Charles H. T. Cole, Chauncey Robinson, John Millard, Joseph Pratt. In Barre, Charles Lee, esq., post-master, Farmingham, Artemas Loveland, Jarvis M. Skinner, Allen Porter, George Taylor, Elisha Wright, Joseph A. Lattin. In Shelby, Charles F. Potter, William Parsons, Jeremiah Freeman, Horatio N. Hewes, Amnon Blair and L. A. G. B. Grant.

I am aware there are in each of the towns which I have named very many farmers of merit and enterprise besides those which are named in this communication, and it is a conceded fact that this little county of only nine towns transcends any other of the same size in the State for the growth of wheat.

The wheat crop the present year was as good as usual in quantity and of good quality, but not equal in quantity to the yield of last year, (1850.) Very many fields gave an average of forty bushels to the acre. The average yield of wheat for the county, in the opinion of good judges, would exceed twenty-five bushels per acre for that year.

Mr. Roswell Clark, of this village, owns a large farm adjoining the shore of Lake Ontario, on the east side of Oak Orchard creek, he had seventy acres of wheat in one field, he harvested and thrashed 2,800 bushels of first rate wheat, equal to 40 bushels per acre; 57 acres of Soules, and 13 of bearded or buckeye wheat. The soil was mostly clay. In this same range of country, along the lake shore, in the town of Somerset, Niagara county, Mr. Allen Hoag raised the present year, on 17½ acres of land, 900 bushels of Soules wheat, equal to 51¼ bushels per acre. From a careful estimate it is believed the county of Orleans yields about 500,000 bushels of wheat per annum.

An experiment has been made here in raising tobacco, by Theodore Close, and has succeeded well; he has cultivated two acres, and has stated to me, that after paying all expenses for cultivation, and preparing the crop for market, and paying ten per cent on the land, valued at $100 per acre, he has a clear profit of $60 per acre. As the weather in the spring, and the fore part of the summer, was cold and wet, and the plants were late in getting a start, he is unable to say what may be the result in a more favorable season, he designs to continue his labors the coming season and will report the result of his experiments to the county society.

There were four farms offered for premiums which the committee examined. The first was Edward Raymowe's, in Ridgeway, of 80 acres, well situated one mile south of the Erie canal. A good share of the farm is a sandy loam, easy to cultivate and very well fenced, with a fine orchard of grafted fruit, with barns and sheds well arranged; the lots were fenced in good shape; the dwelling house pleasantly situated with a good garden; seventeen acres of wheat (Soules and Fint) of good quality; seven acres of corn, also four acres of corn sowed broadcast, to feed the milch cows on in August and September, as it was believed it would add much to the quantity of milk, and particularly to the fine flavor of the butter, (Mr. O. M. Barber, one of this committee, had tried the experiment, and he thought with success.) Stock on the farm, eleven head of cattle, five horses, fifty-eight sheep; hogs and pigs of a good breed, and a plenty of poultry; there were twenty rods of very good stone wall, and yet much was wanting to make it a premium farm.

The committee then proceeded to examine the farm of Ora Lee, in Barre, of 131 acres, 30 acres of woods, containing a beautiful sugar grove, with every arrangement for manufacturing sugar in the season of it, in such quantity as to possess an independence above the South, or Islands of the West Indies, in the supply of that important article. The farm is finely situated and handsomely divided into lots, with good rail fence and stone wall; and at the time of arrival, we found our friend Lee with his laborers, still progressing with his wall, adding to the permanent value of his farm in a two fold ratio, by clearing the soil of stone, giving ease and facility to the plow, as well as securing a permanent fence. Thirty-five acres of wheat, ten of corn, thirteen of meadow, a fair quantity of cattle, horses, sheep and hogs on the farm, not particularly ennumerated at the time; the dwelling house and out buildings were good.

The next farm examined (partly adjoining the one last described,) was that of Charles Lee, Esq., virtually the father of this society; he was the first president at the organization in 1851, and for several successive years. His farm contains 218 acres, sixty of which is wood land, and lies on Maple ridge, so called, being a ridge extending a number of miles east and west, with a road running east and west through about the middle, and known by the name of *Lee-street*. On our arrival at the house, which is a large two story one, with a wing, built of stone, in the best manner, and after being refreshed with tea and other good things of this life, so common among gentlemen farmers at the usual hour in the afternoon, we took up the line of march to view the south half of the farm, by going to a barn on the south side of the street, well filled with wheat, of his favorite quality, White Flint, and then through a wheat stubble field, which from the appearance of the product and soil, was in a high state of cultivation, where we saw some very fine swine of an improved variety, called the Sussex breed. We then passed through a very pleasant grove of sugar maples, all in full view of the house, and then to the fields south and east, which showed the power of industry, by clearing the land of stone, (being a handsome limestone ridge,) and the erection of long strings of superior stone wall, about five feet high; the teams were in the field plowing the summer fallow, preparatory to seeding; the soil appeared to be rich, perfectly free from weeds or grass, and every thing wore the appearance of scientific farming; the orchard was large, with a variety of good fruit; we then crossed the east and west road, which divides the farm nearly in the middle, and found some excellent meadows, and land well adapted to wheat, corn, barley, oats, grass, &c., and also a superior string of stone wall, five feet high. The farm is well and uniformily divided into lots at right angles; the fences of wood and stone were uniformily good;

some blind drains had been laid with good success, and water conducted in logs to a penstock at the barn yard, an accommodation to be highly prized by every farmer, who consults his own convenience, and the comfort of his stock.

The crops and stock on the farm the present year are as follows: 27 acres of wheat now in the barn, which Mr. Lee says will yield at least 27 bushels per acre, (his wheat averages from 25 to 30 bushels to the acre per annum,) five of corn, six of oats, five of barley, thirty of meadow, five of orcharding, nine neat cattle of superior grade, 274 merino sheep, excellent in size, model and fineness of wool. Barns, sheds, carriage-house and stable, corn-house, and all the necessary appendages, were in good order and well arranged. I think Mr. Lee observed he never had "a rat or mouse to take up their abode in his corn-house," from the fact they could not get into it. It was elevated nearly three feet from the ground, six columns were set up and a large flat stone laid on the top of each and the sills rested on the stone, and the steps were always detached from the house except when in actual use.

The dwelling house has a most excellent cellar, a very important pre-requisite in this latitude, (especially when the thermometer stands eight degrees below zero, as it was a few days ago in this place;) the arrangements around the house and on the premises are such as will attract the attention of the traveller; and I may say with propriety of Mr. Lee and his lady, they have a place for every thing and every thing in its place.

The next farm inspected was Mr. Artemas Loveland's, lying also in Barre, about two miles south-west of this village, containing 109 acres, beautifully situated, the rail-road from Rochester to Lockport runs through the north end, which adds nothing to the beauty or convenience of the farm, but rather detracts from both. The soil is almost wholly of a sand and gravel loam; the surface is handsomely diversified, the soil good, and lots well arranged; all the stone gathered up and mostly laid in one string of full wall; the fences in general are built of cedar, of good height, staked and capped; the water from a fine spring in the central part of the farm is so disposed of as to water a number of the lots; an orchard of good fruit; the dwelling house and barns, and all of the out buildings are good. A perfect system of economy and neatness is visible in every department, on the farm, as well as with and about the buildings, but one deficiency was visible and that was the want of shade trees around the house. I consider forest and fruit trees around a house to answer a three fold purpose: first, to protect the house and the occupants from the rays of a scorching sun; also from the storm and the severity of a cold winter's wind; lastly and not the least, good delicious fruit, handy for family use, and also for the comfort and pleasure of those who may be your guest.

The crops on the farm the present year, are 28 acres of wheat, and 10 of corn; there are 20 head of fine cattle, 30 sheep, horses, &c. There were 14 acres of woodland. Mr. Loveland has been a successful grain grower, and has sustained his farm well by a proper rotation of crops, and the application of manures, and to him was awarded the only premium offered for the best improved farm in the county, $10.

In review, the committee have to say that Mr. Raymowe's farm was under common improvement, Mr. Ora Lee's farm somewhat in advance of that, and although Mr. Loveland meritoriously received the premium awarded to him, yet I am of opinion the science practically applied to farming, by Charles Lee, Esq., of Barre, entitles him to a preference amongst the farmers in this town, and is rarely excelled by any in the county.

Although I have extended this communication far beyond what I had designed, yet I cannot refrain from penning a few lines more. I have heretofore remarked that along the range of the Erie canal, and between that and the great ridge road, is the best horticultural district in the county. The villages on the range of the canal, commencing on the east side of the county, are Holley, Hulberton, Hindsburgh, Albion, Eagle Harbor, Knowlsville, Medina, and Shelby Basin. Large quantities of apples, green and dried, also dried peaches, and some dried plums have been shipped from this county, to the east as well as west, and there is no town in this county but has some very fine fruit growers. Abijah Reed, Esq., of Hulberton, has an extensive garden for the cultivation of fruit, vegetables and flowers, including his green house for fruit and plants. He is not excelled by any gentleman in western New-York, for his variety consists of plants and flowers from the four quarters of the globe.

In Albion, which is the county seat, our corresponding secretary, Hon. B. L. Bessac has as extensive and well cultivated garden and fruit orchard, as there is within the bounds of this corporation, but there are so many that are worthy of notice, it is superfluous to discriminate. I will only add, in this little county are cultivated apples of all kinds in great abundance, peaches also, quinces in great abundance of the largest size and finest quality I have ever found in the United States, pears, plums, cherries, and *grapes of a most excellent quality;* and in this village, abundant in quantity. I had almost forgotten to say that the best stone wall in the county, has been erected by Horatio N. Hews and William Soul, of Shelby, Hon. Silas M. Burroughs, (vice President of State society,) Ridgeway; Charles Lee, Esq., and Horace W. Chaffee, of Barre.

The first premium was awarded to Charles Lee, Esq.,....	$3 00
Second to Horace W. Chaffee,........................	2 00

I will here observe that Messrs. Hews, Burrows & Soul did not apply for premiums.

First premium on blind ditching to Jarvis M. Skinner, Barre,	$3 00
Second, to John Young of Gaines,....................	2 00

Should the farmers continue to improve in agricultural science, and its practical application, for twenty years to come, as they have since the organization of this society, those living to see that day, I think, might with propriety say, truly, Orleans county is the garden of Western New-York.

Respectfully yours,

JONATHAN EDGECOMB, *Chairman.*

OTSEGO.

REPORT. WILLIAM DAVISON, PRESIDENT.

The Annual Fair of the Otsego county Agricultural Society, was held in Cooperstown, on the 1st and 2d of October. The weather was fortunately fine and pleasant, and consequently a very numerous assemblage present, especially on the 1st day; there being no doubt, a greater collection of people, than at any former fair ever held in this county. The exhibition of cattle, horses, sheep and swine, was as good, if not better, than at any other previous year. Some of the Morgan breed of horses were exhibited, which added much to the show. There were also some fine French Merinos, which attracted much attention. The exhibition of domestic manufactures was held in the tent, which the society had recently purchased, and which arrived only the day before, and was not put up until the day of the fair; but, although it was quite late before all was arranged, yet there was taken in at the door of the tent, 73 dollars; admittance being only 12½ cents each, to those who were not members, while members with their families were admitted without any charge. The ladies had not forgotten the fair, they brought of their handy work a great variety of useful as well as ornamental articles. In butter and cheese, it was difficult to decide between some twenty competitors; their samples all being of the first quality. At 10 o'clock, A. M., on the second day, the plowing match took place; the piece of land selected for plowing, had never before been plowed; the sod was very tough, rendering it difficult to be plowed, yet the plowmen did their work well. At two o'oclock P. M., the society met in the tent, where they were addressed by the Rev. Dr. Miller, of Hartwick Seminary, who delivered a very appropriate and excellent address on the science of Agriculture. The address was afterwards, by the request of the society, published in the county papers. The Annual Meeting was held on the 20th December; there was quite a number of competitors on field crops, more perhaps, than at any previous year, which shows that the people are beginning to take more interest in this important branch of science. It was thought best to unite into one, the two agricultural societies, which have been for some time in existence in this county; we shall now be able to offer higher premiums, thus holding out greater inducements for the farmer and mechanic, to present for premium their various articles of manufacture.

At the Annual Meeting of the Society, held in the village of Cooperstown, Dec. 20th, 1851, the following premiums were awarded:

On Field Crops.—Best acre of winter wheat, $26\frac{42}{60}$ bushels, Wm. Davison; 2d best, $29\frac{11}{60}$ bushels, Philip Potter. Best acre of spring wheat, $24\frac{46}{60}$ bushels, R. Warren; 2d best, $19\frac{46}{60}$ bushels, Wm. Davison. Best acre of buckwheat, $21\frac{42}{48}$ bushels, W. Davison. Best acre of barley, 47 bushels, 22 lbs., Constantine King; 2d best, 47 bushels, 32 lbs, Wm. Davison; 3d best, 40 bushels, Wm. C. Davison. Best acre of oats, yield by weight, 3,434 lbs , A. Barnum; 2d best, 2,112 lbs., Joseph A. Cheney; 3d best, $67\frac{11}{32}$ bushels, W. G. Northrup. Best acre of corn, $81\frac{33}{56}$ bushels, William G. Northrup. Best ½ acre of beans, 8 bushels 22 lbs., William Davison; 2nd best, 260 lbs., A. Barnum; 3d best, 204 lbs., Joseph A. Cheney. Best ½ acre of potatoes, 7,220 lbs.; Ebenezer Chaffee; second best, 6,190 lbs., Alexander H. Clark; 3d best, 5,670 lbs., William Davison; 4th best, 4,990 lbs., A. Barnum. Best 10 roods of carrots, 3,396 lbs., Ebenezer Chaffee; 2nd best, 394 lbs., Elihu Phinney; 3d best, 2,909 lbs., Alexander Taylor; 4th best, 2,025 lbs., William Davison. Best 10 roods ruta baga turnips, 3,289 lbs., J. A. Cheney; 2nd best, 2,444 lbs., William Davison; 3d best, 1,100 lbs., A. Barnum.

The society received a deputation from the towns in the south and south-western parts of the county, proposing to abandon the society known, for many years, as the Butternuts Agricultural Society, and unite with the county society. After hearing the arguments, for and against the proposition, which were given with candor and apparent good feeling, it was agreed to unite; and it was stipulated to hold the annual fairs alternately, at Louisville (Morris) and Cooperstown.

The society proceeded to the election of officers for the ensuing year, which resulted as follows:

Hon. Samuel S. Bowne, President; Henry J. Bowers, 1st Vice President; John W. Tunnicliff, 2nd Vice President; Edward Hall 3d Vice President; John T. Phinney, Treasurer; Chester Jarvis, Secretary.

Executive Committee.—Francis Rotch, R. H. Van Rensselaer, Williams Rathbun, David B. St. John, Rensselaer Day, Thomas Jackson, Alexander H. Clark, Hiram White, Nelson H. Washbon, R. Franchot, David Bundy, W. Frater, Jonah Davis, Joseph W. Ball, Abijah Barnum, S. G. Cone, F. A. Pearsall, William A. Walker.

Report of W. Davison, President, in answer to the circular of the President of the State Society.

Dear Sir—In compliance with your request, in regard to the agricultural condition of our county, I have endeavored to obtain the information which you desired, but it is more imperfect than would, perhaps, have been expected.

As to your several inquiries; Frst, (our county's chief product:) This county is mostly a grazing one, and consequently, best adapted to dairying. Cheese being the principal produce, though butter is made in considerable quantities. The increase the past year in these two articles is about 12 per cent. The number of acres devoted to dairying is not well ascertained. The other important products are principally oats, corn and potatoes, with hops in some few towns. Wheat is beginning to be raised once more, and it is probable that in a few years this important grain will be raised as plentifully in this as it is now in other more western counties. I have put the quantity of land tilled over and above that of past years, at 1200 acres. There has been but a small increase in animal stock, but a marked improvement in breed. The scientific attention to farm cultivation is beginning to gain ground, though not very rapidly. As to the price of farms, they have increased in value, I should think, nearly 8 per cent, owing, principally, to draining and fertilizing. I have now answered your various questions, as far as it has been in my power todo so. We have had, in this county, two agricultural societies; (which are now united,) and, though not antagonistic, still operated to prevent the friends of the cause from concentrating their energies and collecting and treasuring up, in one repository, the whole facts, that would be a chart for present and future guides; and, therefore, there is no doubt but that our county is in a more flourishing condition than would have been at first supposed by the data on hand. I hope that the little information that I have given, may, in some measure answer your expectations, though it does not come up to what I should have wished to have been able to give on the subject.

PUTNAM.

REPORT. THOMAS B. ARDEN, PRESIDENT.

Agreeable to the requisition of the statute, passed May 5th, 1841, to promote agriculture, I have the honor to lay before the executive committee of the State Society, the following statement of the formation and progress of the Putnam County agricultural society:

Due notice having been given, through the columns of the county paper, a public meeting was held in the town of Carmel, on the 29th of March, 1851, at which a constitution was adopted, and the officers therein called for duly elected. Early in April a premium list was circulated which, on account of the advanced state of the season, the executive committee judged expedient to make rather limited. At a subsequent day, it was decided by the executive committee to hold a fair and plowing match, in the town of Carmel, on the 8th and 9th of October. The citizens of that place having contributed liberally to our treasury, and generously offered to make all necessary enclosures, sheds and fixtures for stock, and also provided a commodious tent. The exhibition came off on the above days, and the weather being propitious, the farmers of Putnam with their wives and daughters, assembled in larger numbers than the good town ever saw congregated before. It was manifest the true spirit was abroad, and if nothing has been gathered in that useful experience and refinement of knowledge, which constitutes our aim, the good will that prevailed throughout the two days of the fair, together with the abundance of the exhibition, is a sure presage of the good result of this our first effort; and I trust, when our farmers come to reflect, that the premiums are only the "cullings" of an agricultural association, they will come prepared another year, to render ideas for "value received." The plowing match did not come off; the drought having left the sward ground too stiff, for a fair trial in the opinion of the judges. This I regretted myself, not holding to the doctrine that an absence of obstacles is necessary to a skilful practice of any art or profession. In my rides through the county, I was pleased to see that the landholders, having low meadow and boggy land, were actively engaged draining and fencing the same, for the unusual dryness of the location not only exhausted our streams, but most of our springs and all the swamps not contiguous to the lakes. The efforts of Mr. James Raymond, of the town of Carmel, deserve particular notice, as they were more thoroughly conducted than any coming under my observation. The muck from his ditches, which was the richest in organic matter I have ever seen, was carted to his uplands to be incorporated with the gravelly loam; the stumps had all been removed by his farming force, collected and burnt on the ground, leaving him a residue of inorganic matter, sufficient, by proper and judicious distribution, to invigorate his whole tract. Mr. R., I observed, had likewise so distributed his ditches, as not only to carry off water derived from springs, but the surface water of the adjacent hills, a source too frequently regarded as of no importance.

The improvement of land by irrigation, though of ancient date, is still one of those imperceptible causes, which require many instances in a neighborhood to satisfy the most of farmers of their utility; and I was pleased to see both on the farm of L. D. Clift, of Carmel, and H. C. Wilson, of Putnam Valley, very successful applications of the streams, which their peculiar locality enabled them to avail themselves of; these gentlemen are entitled to much praise, as the work is chiefly the labor of their own hands, carried on at such times as most farmers are content with walking over and viewing their farms, and if a *thought* of improvement chance to pass their minds, it most generally dies a natural death.

Much is to be done to establish the farmers of this county in an enlightened system of husbandry; and the work is two-fold, for having studiously rejected the suggestions of science as the humbug of the day, these prejudices are first to be eradicated, before the work of sowing the seeds of improved agriculture can be commenced. But I trust now, that our society has won a place in the hearts of our farmers, the task will be carried forward by the many, and hence prosperity must attend our efforts.

Mr. Clift, at a very short notice, addressed the society at some length, and with much ability. He is one of the foremost in our cause, and the association owes a great share of its success to his exertions in its behalf. In the Transactions for '41, he has given a very correct history of our county, which supercedes the necessity of any further details on my part. The society very much regreted that circumstances beyond its control prevented the examinations suggested by the report of the State society, as, doubtless, much valuable data would be brought together, available for both scientific men and our citizens generally, whether employed in the arts, manufactures or agriculture, I therefore entertain the hope that something may be done during the ensuing year.

It will be the constant endeavor of the society to advance the common cause by every means within its power. Our first endeavors will be to circulate some standard agricultural paper, by which together with the volume of the State Transactions and American Institute, which are disseminated as premiums, we trust a fresh impetus will be given to their operations, and the pride which is latent in every American bosom will be called forth, for no farmer will admit he cannot do what his neighbor has accomplished before him.

The accounts of the society stand as follows

Amount received from the State, ...	$38 00
" for membership, &c., ...	283 00
" from sale of tickets at fair, ...	108 56
	$429 56
Amount expended at fair, ...	$28 08
" " for printing, ...	15 00
" of incidental expenses, ...	14 38
" expended in premiums, ...	98 50
	$155 96
Balance in treasury, ...	$273 60

QUEENS.

REPORT. JOHN HAROLD, CORRESPONDING SECRETARY.

The general interests of the Society have been progressive during the last three years, as the number of members and increased funds testify. It is highly creditable to the county to witness the zeal manifested by our farmers to become acquainted with the best means of improving their agricultural operations. A spirit of inquiry exists as to the best implements, the best stock, the best seeds, and the most approved modes of cultivation. Old prejudices are fast wearing away, works on agriculture are inquired for, science and practice have combined to convince our citizens that there is something to be learned besides "rising early and working hard." A few years since, probably few counties in the State followed the plan of shallow plowing more than the southern part of Queens; three to four inches was thought deep enough, and so continued to be worked till the soil was completely exhausted to that depth, while below was a hard pan like a baked brick, through which a plow share never entered.

I have before me the diary of a farm so worked; the character of which was, "that hay enough could not be raised on twenty acres to keep a horse." The owner of this land became a member of our society; a new impulse was given to his labors, and from having read and heard how others were improving their farms and increasing their crops, he was desirous of doing the same. Eagle D. plow was procured from Ruggles, Nourse & Mason, and in the fall of 1844, a seven acre lot was plowed up ten inches deep. When the first land was plowed, the neighbors came round to see the folly, as they termed it, of the book-farmer. One said he was killing the land in plowing up the yellow clay; another, the lot would not be worth so much as before by twenty dollars per acre; and another, he would find it all out next year. It was, however, all plowed, and pretty yellow it looked. By next spring it had changed to a brown color, and was planted with potatoes, which produced a good crop. Still the neighbors said it would never raise grain or hay; it was quite killed for all that. In September, 1845, it was well plowed, and manured with home-made poudrette; two bushels of white Hutchinson wheat, twelve quarts of timothy seed, and in the spring, ten pounds of clover sowed to the acre. This seven acre lot produced the next year thirty-four bushels of wheat to the acre, weighing sixty-two pounds per bushel, and was exhibited at our county fair, receiving the first premium. This was a hard fact to get over; some decided it was all owing to the season, and some, it happened to be sowed at the right time of the moon. The lot has now been mowed five years, and was considered this year the best piece of timothy grass between Hempstead and Brooklyn, (twenty-one miles.)

Improved plows and other implements are now in general use, and a spirit of noble emulation exists to raise the best agricultural and horticultural productions. The society is greatly encouraged by the increasing interest manifested generally, the members have come forward with great promptness to pay their dues, and during the past year about one hundred and eighty new names have been added to the list of permanent members.

In 1848 the receipts from all sources was,		....	$221 11
1849	"	"	445 27
1850	"	"	591 66
1851	"	"	963 68

The tenth Annual exhibition of the society was held at the village of Jamaica, on the 2d day of October. The day was a beautiful one for a jubilee, and joyous and well did the farmers of Queens, and their wives, their sons, and daughters, avail themselves of it, and come forth in all their freshness, delicacy, and noble manliness. The gathering was one of the largest ever congregated in the county towns of Long Island, and every man of influence, well enough to be there, was present, also numerous delegations from other societies, some from a good distance, every place in which horses could be put, or wagons stowed, was full, and the only thing lacking was room, and on no former occasion was the county of Queens so well represented by the queens of the county. It is worthy of special remark, that notwithstanding the large number of people congregated on the fair ground, and about the village, the utmost good order and quietness was to be observed, no fighting, no drunkenness, in fact nothing that could mar the general enjoyment of the occasion.

The premium list was published early in the season, and consisted of eight silver cups, twenty-six silver medals, seven silver butter knives, one hundred and thirty-nine dollars in money in cash, one hundred and fifty diplomas, eighty volumes of Transactions, one hundred and twenty volumes of books, on various subjects, by Stephens, Youatt, Martin, Skinner, Morrell, Canfield, Johnston, Norton, Dana, Gardiner, Allen, Browne, Bement, Buist, Paxton, Parsons, Downing, Barry, Thomas, Loudon, Neill, Lindley, Breck, Bridgman, Kendrick, Miner, Townly, Beecher, and Soyer.

The exhibition ground was in the center of the village, on the land of the Hon. John A. King, to whom the society is greatly indebted for its prosperity, and was both spacious and pleasant, being surrounded by lofty and ancient trees, and most admirably adapted for an agricultural display. Van Wagner's mammoth pavilion, nearly one hundred feet in diameter, was erected in the center, on one side were two smaller tents, one for the accommodation of the ladies, and the President's tent for receptions, two on the other side, for the Secretary and ticket seller. A ring was constructed, 360 feet in circumference, for the trial and and examination of the horses, with a stand in the center for the judges; the various grades of stock were arranged around the ground under efficient committees. The main tent was crowded during the day to its utmost capacity, and every person appeared to be well pleased.

Thorough bred and grade stock Dairy Cows.—The show of stock was more remarkable for quality than quantity. Some very fine animals were exhibited. Four silver cups, eight silver medals, $36 in cash, besides books and diplomas, were awarded.

Horses and Mules.—The exhibition of horses was very numerous and superior, and maintained the high character of the island in raising the best blooded horses in the State. Among the studs was "Young Norman," sired by the thorough bred horse "Diligence" out of "Joan of Arc," and weighed on the morning of the fair 1,413 pounds. Four silver cups, five silver medals, $11 in cash, twenty volumes of books, and diplomas, were awarded.

Sheep and Swine.—The show of sheep was small; of swine good, especially those of Jeremiah Valentine, Esq., of Flushing, and Teunis Van Brunt, Esq., of Jamaica. Three silver medals, $20 in cash, besides books and diplomas, were awarded.

Butter.—The products of the dairy were highly creditable to the county, and in the opinion of the judges would compare favorably with the more celebrated dairy districts of the State. Twenty-three samples were entered, fifteen from adults, and eight from girls under twenty-one years of age. The judges reported it to be the best quality of butter they had ever seen offered for competition; that nine samples were so much alike, that they recommended the same premium to each. One sample of fine butter was made by Miss Anna C. Clames, of Hempstead, nine years of age. The premiums awarded, were six silver tea spoons, eleven silver butter knives, The Cottage Garden and diploma. The statements of the successful competitors all agree in the use of cold water in making the butter, and using nothing but the ground rock salt, at the rate of one ounce to the pound of butter, and no sugar or saltpeter to be worked up in it, the milk creamed and churned early in the morning; the butter to be kept in a wooden firkin or stone pot will do in winter, not to be worked so much as to destroy the grain of the butter, which they believe injurious to its preservation. They also recommend rock salt in preference to Syracuse salt.*

Grain.—The exhibition of grain was large; the wheat fine, especially the White Hutchinson and Mediterranean; and was the best display ever exhibited by the society. Nineteen volumes of books were awarded.

Vegetables and Roots.—In consequence of a severe drought, it was feared this department would be limited; we were most disagreeably disappointed; the quantity and quality were excellent, and reflected great credit on the exhibitors, many of whom are exclusively engaged as market gardeners. Mr. Theodorus Burroughs, of Newtown, exhibited Mercer potatoes, 80 of which filled a basket. Premiums—thirty-eight volumes of books and diplomas.

Agricultural Implements and Wagons.—Mr. George F. Jerome, Hempstead Branch, exhibited an improved railroad horse power, by which the cog-gearing was dispensed with, and for which a silver medal was awarded. The market wagons of Messrs. Reeves, & Co., Jamaica, were superior, one of them capable of carrying 60 bushels of potatoes to market, in baskets.

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*From an analysis of the various kinds of salt made at our own works by Prof. Cook, which is published in the present volume, it will be seen that there is no better salt made than at our own works.

Plowing Match.—The plowing match, for which an hour was allotted, and an eighth of an acre the space to be plowed, commenced at three o'clock, in the rear of the exhibition ground. There were six entries. The earth was very dry, presenting a severe test to the skill of the competitors. The performance created great interest among the bystanders. The first premium, a medal, or five dollars, was awarded to Theodorus Burroughs; the plow was an old Peacock patent, improved by Mr. Burroughs, who held and drove himself, accomplishing the task in thirty-two minutes, with a yoke of oxen. The second premium was awarded to John A. King, Morris Kelly, plowman; the third to John Denton, Patrick Carrigan, plowman; and the fourth to Samuel Wood, N. Hempstead.

Fruit and Flowers.—The display of fruit and flowers was the subject of general commendation. The varieties good and specimens excellent.

D. F. Maurice, Esq., of Oatland, 86 varieties of pears, and 11 varieties of grapes; Capt. I. Briggs, of Jamaica, 20 varieties of pears. The Flemish beauty, by D. F. Maurice, and Louise Bonne de Jersey, by Capt. Briggs, were exceedingly fine. Jacob Williams, Esq. Searingtown, 53 varieties of apples; Jacob B. Boerum, Esq., Flushing, 6 bunches of grapes, weighing sixteen pounds. Forty-volumes of books and diploma were awarded.

Domestic Manufactures, &c.—The space allotted to domestic and ornamental manufacture, was large and well filled, reflecting great credit on the taste and skill of the wives and daughters of Queens. A large number of diplomas, and several books were awarded.

Exercises at the church.—At twelve o'clock, the hour appointed for the commencement of the exercises, the Reformed Dutch Church was completely filled, there being present not less than 1500 persons, including every leading and influential man in the county; Ladies too, attended in considerable numbers. A voluntary on the Organ by Miss Brinkerhoff, opened the proceedings, followed by an appropriate prayer and thanksgiving offered by the Rev.

Mr. Goldsmith, of Newtown, to the Sovereign of the Universe, whose kind and gracious providence fertilizes the earth. An anthem and ode were sung by Mr. Thomas Bradley, and a choir who had offered their assistance.

The Hon. John A. King, President of the Society, then rose, and said his duty was very brief and most agreeable. He had first to congratulate them on the tenth anniversary of the Queens county Agricultural Society. All combined to make it the most successful one. The weather—the sun shedding his glorious rays over them, the variety and excellence of the articles produced, and above all the cheering faces he beheld around him all combined to make it the most successful. One thing he would say: It was "the farmers own day." It was his by sanction of the law, it was part and parcel of the legislative enactments that it should be set apart, and we did but our duty in doing so.

The State Agricultural Society of New-York, was the greatest in the United States. Not only did they offer a generous list of premiums for the encouragement of agricultural productions; but they published a valuable volume every year, containing the most useful information on all subjects connected with them in the State of New-York and every other, throughout the Union.

The example had been set by them to encourage and promote the interests of those who till the soil, the great source of wealth and strength; and the county societies—and this was one of them—had followed quickly in their train. He trusted that the farmers, (and gardeners too, for so they had become, and it was their interest it should be so, as the great cities growing on their boundaries, required all they could raise, from the great ox to everything that grew beneath him,) would do honor to those that make them rich, and come forward on these important occasions once a year, not only with their productions, but with a little money, too, so as to help those who could not do so well. As he had said, his duty was very brief, and he would offer no further remarks, but introduce to their notice the Hon. General Dix, formerly member of

Congress, and now a farmer of Westchester county. The Hon. John A. Dix then came forward amidst loud applause, and delivered a most appropriate address, which was listened to with deep interest. The following extracts are given:—

"I will proceed to point out a few great objects to be kept in view for the improvement and benefit of agriculture. First in importance is the education of your children. In this I have no reference to the higher views of education, nor even the moral elevation. Though certain it is that crime decreases as education and knowledge increase. Those crimes requiring a greater degree of intelligence, as fraud, and the like, may rather increase, but crimes of violence, and those of greater atrocity, certainly are diminished. But education is a great assistant to agriculture, the standard of popular intelligence is advanced, and labor well and intelligently directed, is most profitable. The same amount will accomplish much more, directed by intelligent minds than by ignorant men. I do not mean to say that an uneducated man is necessarily an ignorant one. Knowledge may be gained, and a man may become wise from observation; but how much more knowledge may be gained, and how much wiser he would become with a mind disciplined by training.

The observation is less critical, and the mind arrives at a judgment more tardily than when trained by intellectual discipline. The condition of the schools in his neighborhood, should be an object of leading interest to the farmer. He should see that the teachers are capable, and apt to rule. Not only that they have the necessary acquirements, but possess the art of teaching; and as a general rule, indeed, I think that good teachers are more than good books; and to this end, to secure these qualities, they should have liberal wages. The great defect in the old system was that they were not sufficiently paid, but there is no excuse for this now, when they are exclusively paid by the public funds and taxes on property.

"Next in importance to the preparation of your children, is the proper use of the land at your disposal, so as to obtain the greatest practical production. I trust I shall not be looked upon as a sinner against the light of science, if I say this must be determined by an actual observation. The different chemical properties in the soils, even in neighboring farms, is to be considered and ascertained. In this respect the geological survey of the State, is a great advantage; but is necessarily only of a general character. Where the soil is formed by decomposition of lime stone, any manure containing lime, may not be of service, and may even be prejudicial; so in soils of slate or other later formations, a different kind of manure may be required; and upon these points, suggestions of a general character can only be obtained, personal actual experience is necessary. Adjoining fields may require different treatment, and few farmers can have the soil accurately analyzed. The quantity of land devoted to grain—the different kinds—the number of cattle or stock to be raised—these are all problems that every farmer must determine for himself, and upon these I have no practical knowledge; and I am admonished to abstain from all advice; but there are some topics upon which I will throw out a few suggestions. You have every prospect of more than ordinary prosperity and possessing some surplus. How should that surplus be applied? In enlarging or extending your farms, or in rendering those you have more fertile by the application of labor, and fertilizing agents? The general observation is, that the farms are *too large.* This was inevitable in the time of our early settlement when land was cheap; but latterly the influence has naturally been to contract them. The same amount of labor applied to a smaller farm, will, in some cases, produce twice as much.

In tilling very large farms, they will naturally show some indications of neglect—and he who has more acres than he can conveniently cultivate, had better sell them and improve the cultivation of a portion. By this he will find his pleasure, interest and comfort promoted. Another point of vast importance is the order and neatness of the farm house. They should be tasteful, comfortable and durable. The most desirable material is stone; but one which in your district does not abound; hard burnt brick, however, is an excellent substitute. There is generally a prejudice against the use of stone, from an idea that it causes or promotes dampness—but this idea is entirely unfounded; properly constructed, they are warm in winter, cool in summer, and dry at all times.

"In many parts of Europe, where the climate is more damp than ours, the houses are nearly all built of stone, and are not damp. The best mode of building is by leaving a space between the plastering on the inner surface and the outer wall. If the plastering be laid on the stone wall, it will show the damp in particular states of the atmosphere, even by water running down, not as is commonly supposed by the damp coming through the stone, but because the stone being a non-conductor of heat, and the air of the room (being warmer than that without,) coming in contact with the colder atmosphere is immediately condensed, and the dampness that is in it, runs down held in solution. This may be easily obviated by admitting a portion of the air (however thin,) between the inner and the outer atmosphere. The most effectual way is to stud off with scantling; but it may more easily be done by leaving a small space between the wall and the plastering. But whatever material may be used, it should be tasteful in design. It costs no more than to throw the materials together without architectural taste or proportion. The residence of the farmer, should be simple and unpretending—characteristic of the class of men—independent and unobtrusive. It is desirable that the agriculturist should have these distinguishing characteristics of our country, and if possible interpose a barrier against the growing waste and extravagance of great cities. In no art or science have we improved more of late, than in architecture. The modern style is much more suited to the comfort of the inmates, than the gorgeous ancient gothic, and other orders; and is withal, tasteful and elegant."

"All excess of ornament is mere waste, and does not improve, but impairs the effect of the edifice. It involves an enormous expense too. This is not so much the fault of the country as in cities, and in none more so than in New-York. This extravagance is very unwise. We have here happily no rule of primogeniture, and fortunes dwindle away more rapidly than they are amassed, by the operation of law. The edifice erected is often more than the proprietor, and generally more than any *one* of his children can support, and it consequently goes into the hands of others before a single generation has passed away; and it is impossible for this reason to behold the rearing of the splendid mansion without reflecting that the unconscious proprietor is building for strangers.

"I do not mean that the farmer's house should be without embellishment—far from it. Let it be surrounded by the beautiful and graceful in nature—the vine and the flowering shrub. They will bear the rigors of our winter, and nature attires them with beauty, if we will but take a little pains with them once a year. This is the charm of the country houses and cottages in England."

The address was received with enthusiastic applause at its conclusion, and Albert G. Carl, Esq., moved that the thanks of the society be offered to the Hon. Mr. Dix for his address, and that he be requested to furnish a copy for publication, and thanks also be offered to Mr. Thomas Bradley, and the choir, as also to the Reformed Dutch Church, who had granted them the use of that edifice. This resolution was seconded by Ald. J. Spooner, Esq., and carried unanimously.

Winter Meeting.—The following premium was given at the winter meeting held Dec. 3d, 1851:

Statement of Townsend B. Pettit, on application for a premium for a quarter of an acre of potatoes:

The land is situated in the town of Hempstead, Queens county; the lot is what is usually called "plain soil," being of similar character to the great plains of this town. Previous to the crop of potatoes, it was pastured two years, and then plowed up seven inches deep, and planted with corn; poudrette manure used in the hill. In the spring of 1851, fifty loads of sixteen bushels each, of horse manure, were spread on each acre, and plowed under, the potatoes being dropped in every third furrow, the sets about ten inches apart, and the rows two feet six inches; just before coming out of the ground, the land was harrowed with a bush harrow to kill the weeds, and plowed to hill once afterwards, and hoed once; the stock was "Mercers," they were dug out by hand, and the yield of the quarter of an acre was sixty-three and a half bushels, which was sold by September 20th, at seventy-five cents per bush. The following is a correct statement of cost and profits on the quarter acre:

12½ loads manure at 80c.,	$10 00
Plowing,	50
Hoeing and digging,	2 00
Carting to market,	3 00
Cost of seed,	1 50
	$17 00
	m
Sold 63½ bushels at 75 cents per bushel,	$47 62
Expenses,	17 00
Profit, ($122.46 per acre,)	$30 62

TOWNSEND B. PETTIT.

and for which a Silver Medal was awarded:

(Proof furnished of the above statement as required by State Society.)

The Annual Meeting was held at the court house, Hempstead, on the 3d of December, 1851. The following officers were elected for the year 1852:

President, John A. King, Jamaica; six Vice-Presidents; Corresponding Secretary and Treasurer, John Harold, Hempstead; Recording Secretary, Edward H. Seamen, Jerusalem.

Receipts and expenditures.—The amount received from all sources, including balance of previous year, was $963.68.

Paid in premiums,	$367 97
Expenses of fair and incidental expenses of society,	294 51
Balance in treasury,	301 20
	$963 68

Report of John A. King, President, in answer to the circular of the President of the State society.

Dear Sir—I have to apoligise to you for the delay which has occurred in my reply to your letter of the 31st October, containing a number of queries respecting the agriculture, &c., of the county of Queens. In order to give you the best information on these subjects, I thought I could not do better than place your letter in the hands of the Secretary of our county society, Mr. John Harold, an intelligent man, who takes a great interest in agriculture in all its branches. This reply has been delayed by the closing up of the statements and accounts of our late fair, and in making out the report for B. P. Johnson, Esq. I have now, however, the pleasure of enclosing it to you; I think his answers to your queries are generally very correct, and give the actual state and condition of the agriculture and horticulture of the county during my residence in it, which is now nearly fifty years. I have seen the changes which the steady growth of the neighboring cities has produced in the system of its husbandry, and in the character of its crops; and the accumulated wealth of the county, the inhabitants of which are almost exclusively farmers, is the best evidence of the skill with which they have from time to time adapted their course of tillage to the varied and increasing demands for these productions which enter into the daily consumption of the cities of Brooklyn and New-York; and the result is, that with a population of 38,000, in a county of 16 by 20 miles, there is found this year by the assessors of the several towns, a real property exceeding $900,000, and a personal property of rising $500,000. I think the number of improved acres of land returned this year, 187,000, and not as Mr. Harold states, 200,000. The average value, therefore, of each one, would be within a fraction of $50 as high, if not higher, than the valuation of any other agricultural land in the State for a whole county.

QUEENS COUNTY, *December* 10*th*, 1851.

Answers to the inquiries of Jno. Delafield, Esq., in relation to Queens county, by John Harold, Secretary.

1. What are the chief products of your county? The chief products of the county of Queens are corn, oats, hay, and the products of market gardening. Grain is only raised for home consumption, or as a preparation of the land for grass. The western part of the county is mainly taken up in raising potatoes, cabbages, and other garden vegetables, the large cities of New-York, Brooklyn and Williamsburgh, offering a near and profitable cash market; and this system of culture is rapidly extending to the center of the county, where many of our farmers are already largely engaged in raising what is usually called "market truck." On the south side of the county, many are engaged in supplying New-York with the products of the bays and cultivating small farms.

2. Increase or decrease this year? There has been a large increase this year in the crop of wheat and potatoes, but in consequence of a severe drouth the crop of corn has been light, the heaviest not exceeding fifty bushels per acre, and the crop of hay below an average.

3. The number of acres (about) occupied in cultivation, the quantity and quality of its products? There are about 200,000 acres of land under cultivation in the county; there is a tract of land known as the Hempstead Plains, containing about 15,000 acres held as commons by the town of Hempstead, and capable of raising the best of crops; but from the difficulty of getting a town vote for their improvement, they remain valueless except for grazing purposes. Small portions of this plain soil is under cultivation, and bears fine crops of corn and potatoes, and has the character of standing a drouth well.

The products of the county are about as follows: Hay, average, 1½ to 2 tons per acre, and has sold this year from $12 to $15 per ton. Corn, 20 to 25 bushels per acre, selling at this time at 75 cents per bushel. Oats, 30 bushels per acre, selling at 44 cents. Potatoes, 90 bushels per acre, selling at 75 cts. A silver medal has been given for a crop of 254 bushels, by our agricultural society; 300 bushels has been the largest crop heard of. Rye, 12 bushels per acre, selling at 75 cents. Rye straw generally commands in market nearly the value per acre of the grain. Wheat, 25 bushels per acre, selling at $1.12.

The favorite wheats are the Mediterranean, White Hutchinson, and Red-beard. The first, though not making so good a flour, is less liable to rust and the attacks of insects. The White Hutchinson is also very free from insects. The Australian has been tried, but so far, has suffered from rust. The best crop heard of was raised by Mr. Benjamin T. Kissam, of Flushing, (the Mediterranean,) which yielded 40 bushels per acre, was raised from a lot manured with 1000 lbs. of Peruvian guano per acre, and put down with grass seed, which promises fine mowing next year.

5. There has been an increase in the number of acres brought under cultivation, but to what extent we have no means of ascertaining.

6. There has been a great improvement in the number and quality of stock, by the introduction of choice breeds of Durham, Devon, and other improved stock.

7. Great attention is paid to an improved system of cultivation. About $250,000, has been expended for manure brought into the county. Horse manure costs about 80 cents per load of 16 bushels, delivered in the center of the county by railroad, and at the landing for about 15 cents less. Ashes, for 14 bushels, $1.25. Guano has been used freely; for wheat at the rate of 3 to 1000 lbs. per acre; for oats and buckwheat, 1 to 200 lbs., and as a top-dressing for grass with good advantage. The most approved method to apply it is by mixing it up with plaster, or charcoal and common soil, or sawdust, and spread it broadcast. Our farmers are now pursuing a plan of deep plowing. Formerly from three to four inches was considered deep enough, and below that injurious; now eight to ten inches, and then subsoiled, is frequent. A member of our agricultural society at Hempstead, has a lot of light soil somewhat inclined to gravel, on a slope, which for years

had produced scarcely anything but sorrel. This was plowed up in the spring of 1851, and subsoiled altogether 18 inches deep, a mixture of twenty bushels of shell lime and four of salt well mixed, spread over the lot, and harrowed in, and planted with White flint corn, manured in the hill. It has stood the drouth the best in the neighborhood, and the ears well filled out. Night soil is occasionally procured from Brooklyn, at a cost of one shilling a bushel, and brought up in casks containing from nine to twelve bushels, and mixed with sawdust, plaster, and soil; applied to garden truck, between 9,000 and 11,000 heads of cabbage have been taken per acre from land so treated.

8. During the past year, farms have increased in value from five to ten per cent., and many acres of unimproved land have been purchased by German emigrants for cultivation. The profits of raising garden vegetables are the greatest of all productions, one farmer having refused near $250 per acre for his land near Williamsburgh, stating it would pay him a better profit than the money put out at interest.

RENSSELAER.

Report. J. J. Viele, secretary.

In pursuance of the requirements of the statute, providing for the organization of the State and County Agricultural Societies, the Rensselaer County Agricultural Society begs leave respectfully to report: That in the month of March, 1851, the executive committee convened and revised their premium list, by which they offered on the various productions of the farm, the manufactory, and the workshop, about the sum of two thousand dollars. Their meetings were held nearly monthly, during the season, and their Annual Cattle show and Fair was held upon the society's grounds, in the city of Troy, on the 25th, 26th and 27th days of September last. The executive committee regret to be compelled to say, that their exhibition, although highly respectable, was not as good as in some previous years, nor was the attendance and receipts as large. This was in a measure owing to the severe drouth of the season, which had stinted the productions of the soil and kept in poor condition most of the stock of the county. Again, it is questionable whether the multiplicity and frequency of these fairs has not, in a measure, sated the curiosity and general interest heretofore manifested in the community. Indeed, it is a matter of great doubt whether sufficient interest can be kept up in the community to sustain annual county fairs for any great length of time. The changes and improvements are usually so unimportant and inconsiderable in one year, that it would almost seem as if each exhibition was but a repetition of the one before. It is respectfully suggested, therefore, whether it would not be a sound and judicious policy to hold the fairs biennially instead of annually.

The receipts during the year from all sources, as appears from the treasurer's report, made at the annual meeting held in February last, are as follows:

The whole amount received by the treasurer since the last annual report, is,	$2,178 09
Whole amount of disbursements during the same time is,	2,058 91
Leaving a balance in the hands of the treasurer of,	$119 18

A large number of diplomas and Transactions were also awarded at the annual fair.

At the Annual Meeting held in February last, the committees on field crops made the following reports, and the premiums awarded were paid in addition to those stated in treasurer's report:

Mr. L. C. Ball, from one of the committees on field crops, reported the following: The committee appointed to award premiums on corn, broom corn, flax and timothy seed, report: That no application was made for premiums on corn, broom corn, and timothy seed, and but one competitor for the premium on flax. Mr. Peter Stover claims to have raised on $1\frac{37}{100}$ acres of ground, 550 pounds of lint, and $21\frac{3}{4}$ bushels of seed, at a profit of $34.56 per acre. The committee award to Peter Stover the first premium.

Horace Herrington, from the committee on grains and the culture thereof, reported as follows: The committee on wheat, rye, oats, barley, beans, peas and buckwheat, before making their report would remark, that the number of competitors on field crops warrants them in indulging the belief that the farmers of this county are giving the subject more and more attention, and that the interest in agricultural pursuits in this county is rapidly increasing, showing conclusively the benefits resulting from the establishment of the Rensselaer County Agricultural Society.

After carefully examining the claims of the numerous competitors for premiums, they beg leave to submit the following report: They award the first premium to Eleazer Lockwood, of the town of Brunswick, for the best crop of winter wheat. From the papers submitted by him to the committee, and which were in conformity with the by-laws of the society, it appears that he raised on two acre of land, $69\frac{6}{32}$ bushels of beautiful Mediterranean wheat, weighing over 60 pounds to the measured bushel.

The second premium to B. K. Bryant, of Schaghticoke, for the second best crop of winter wheat; he raised on $2\frac{59}{160}$ acres of land $63\frac{5}{32}$ bushels of Mediterranean wheat, a beautiful sample which would weigh at least sixty pounds to the measured bushel. Your committee would suggest to the farmers of this county, the importance of cultivating this kind of wheat. It is a *hard, firm and sound* wheat, weighing 60 pounds or over to the measured bushel; is seldom attacked by the weevil; yields largely to the acre, and when made into flour produces an article which is worth two to four shillings per barrel more than flour from the ordinary white wheat; it contains more *gluten*, and consequently will produce more pounds of bread, exceeding in many cases the flour manufactured from the common white wheat, 20 to thirty pounds to the barrel. They award the third premium to George Vail, Esq., of the city of Troy, for the third best crop of winter wheat. This was a fine sample of white flint wheat. The yield was $79\frac{8}{32}$ bushels, on a field containing $3\frac{8}{160}$ acres.

Francis McChesney, of Schaghticoke, presented a fine sample of spring wheat, called Isa wheat. The field containing $1\frac{30}{160}$

acres, from which they harvested forty bushels. Your committee award Mr. McChesney one volume of Trans.

They award the first premium of $8 to B. K. Bryant, of Schaghticoke, for the best crop of rye. He raised on $4\frac{147}{1000}$ acres of land, one hundred and fifty $\frac{21}{32}$ bushels.

To Eleazer Lockwood, of the town of Brunswick, the first premium of $6, for the best crop of oats. He raised on two acres, one hundred and forty-four bushels. The oats were fine, plump and heavy.

To Jacob Y. Kipp, of Pittstown, the second premium of $4, for the second best crop of oats. He raised on $5\frac{20}{100}$ acres, three hundred and ninety-four bushels. This crop of oats shows a larger yield per acre, than the crop on which your committee awarded the first premium. The quality of the grain was not as good, and consequently the weight per bushel less.

To Francis McChesney, of Schaghticoke, the first premium of $6, on the best crop of barley. He raised on $4\frac{40}{100}$ acres, one hundred and sixty-five bushels, by measure.

To B. K. Bryant, of Schaghticoke, the second premium of $4, on the second best crop of barley. He raised on $4\frac{101}{1000}$ acres of land, one hundred and seventy-two $\frac{8}{48}$ bushels

To Jacob Y. Kipp, of Pittstown, the third premium of $2, on the third best crop of barley. He raised on $2\frac{21}{100}$ acres, ninety and a half bushels by measure. The barley was light, not weighing more than 43 pounds to the measured bushel.

To Francis McChesney, of Schaghticoke, the first premium of $6, on the best crop of peas. He raised on one acre of land, forty-three and a half bushels.

To David Coonradt, of Brunswick, a premium of $6, on his crop of beans.

To David Coonradt, of Brunswick, a premium of $6, on his crop of buckwheat. He raised on one and a quarter acres of land, $36\frac{7}{33}$ bushels.

Your committee have omitted in this report the copies of the several statements submitted to them by the competitors for premiums. They are hereunto annexed. All of which is respectfully submitted.

Mr. Ford, from the committee on root crops, reported the following:

There was but one competitor on potatoes, who says he raised 317 bushels on one acre and 12 links of land. But the competitor has failed to comply with the 15th regulation.

There was one competitor for carrots, who had not the quantity of land nor the affidavits required by the 15th regulation.

The following persons were then chosen officers for the ensuing year:

President, Richard J. Knowlson; Vice-Presidents, George Vail, Troy, John H. Willard, do, Benjamin Starbuck, do, Wm. Gurley, do, B. B. Kirtland, Greenbush, J. E. Storms, Schodack, Seth Hastings, Nassau, David G. Maxon, Petersburgh, Mr. —— Hubbard, Stephentown, Winants Younghans, Sandlake, Mathias P. Coons, Lansingburgh, Horace Herrington, Brunswick, J. Wilton Davison, Grafton, George Chase, Hoosick, Jacob Y. Kip, Pittstown, I. T. Grant, Schaghticoke, Jacob Menick, Poestenkill, Egbert B. Hull, Berlin; Wm. Hagen, Secretary; Abram Van Tuyl, Treasurer; Executive Committee, Hugh Rankin, Henry Warren, W. S. Sands, John B. Ford, John W. Mott.

On motion of A. Van Tuyl, it was

Resolved, That owing to the lateness of the hour, the lecture of Judge Ball be postponed, and a committee appointed to solicit the delivery of the same on some future occasion. Committee, Geo. Vail, A. Van Tuyl, J. J. Viele.

The President then delivered his annual address.

On motion of Judge Ball,

Resolved, That the thanks of the society are due to the President for his address and the faithful manner in which he has presided over the society for the past year; also, that a copy of the address be requested for publication in the first number of the "Farmer and Artizan."

On motion of Geo. Vail,

Resolved, That the thanks of the society are due to J. J. Viele, for the faithful manner in which he has for a number of years, discharged the arduous duties of secretary.

Gen. Viele rose and expressed his thanks for this expression of the approbation of the society. He had been an early friend of societies for the improvement of agriculture and the arts; he had for many years been an officer of the State and County Society, and regretted that his other business engagements would not permit the appropriation of so much of his time as he had heretofore done. This was a cause, however, of great moment to the laboring and producing classes. It was a means, not only of increasing their wealth and comfort, but of dignifying human toil and elevating the moral and intellectual position of the laboring man. The society might therefore rely to the extent of his power on his continued exertions and cordial co-operation in aiding its general prosperity.

RICHMOND.

Report. Frederick L. Olmsted, Cor. secretary.

The Annual Fair of the Richmond County Agricultural Society was held at the village of Richmond, on the 30th October, 1851. At an early hour, the citizens began to assemble, and much interest was manifested for the promotion and prosperity of the society. The various products from all parts of the Island were brought in in great profusion—all was animation, life and spirit, a mingling up of good feeling, and each one proudly arrogating to himself, that his exhibition of articles was the best.

The display of horticulture was very fine; every variety of vegetables grown on the Island in their greatest perfection, were well arranged for exhibition, and spoke well of the care and attention bestowed upon their growth. The display of flowers was beautiful, and argued well for the taste, beauty and arrangement of our floriculturists.

The cattle and horses appeared well and showed a decided improvement since the organization of our society. Judge Little has introduced a very superior stallion, "Sachem," a brother to "Black Hawk," which will greatly improve our breed of horses. This horse has fine action, combines strength, and trots his mile in 2 m. 40 s.; took the premium. We were pleased to notice a large pair of dapple greys attached to a substantial farm wagon, loaded with farming utensils in the most perfect order, belonging to William H. Vanderbelt, Esq., it spoke well of the care and neatness of that gentleman as a farmer.

Premiums were awarded to the following gentlemen:

To F. L. Olmsted, for the best crop of oats, 57½ bushels to the acre. Daniel L. Clansen, Esq. crop of corn, 110 bushels to acre. Charles T. Leveridge, corn, 83 bushels to the acre. Judge Clansen, crop of hay, 6,860 lbs. to the acre.

Harman B. Cropsy, Esq. has given the society an accurate statement of the result of his experiment with fowls:

Commenced with 115 fowls on the 1st January, 1850.

Sold in the year 10,833 eggs, for	$156 12
" 83 fowls, ...	22 62
	$178 00
Expenses for the same year for corn at 52 cents,.......	75 00
Leaves a balance of	$103 75

Had on the 3d Jan., 1851, the same number of fowls which he commenced with, 115.

The whole exhibition was very creditable to the Island, and from the deep interest manifested by all present, we feel assured that its influence will be enduring upon the prosperity and future growth of the Island. The proceedings of the day closed by an address delivered by Nicholas Adam Leck, which was a very clear, comprehensive, and able production.

Officers for the year: President, Ephraim Clark; Vice-Presidents, D. F. Clansen, Lawrence Cortleyou, William H. Vanderbelt, S. C. Garretson; Corresponding Secretary, F. L. Olmsted; Secretary and Treasurer, Charles E. Leveridge.

Report of F. L. Olmsted, Secretary, in answer to President's circular:

Dear Sir—Before replying to the inquiries addressed to me in your favor I should observe that the amount of land which is economically cultivated in this county, is in comparatively small proportion to its area, which in itself is much less than that of any other county in the State. Family gardens and small lots attached to villa grounds, though devoted to agricultural products, will be overlooked in my estimates.

1. The chief product? Hay.

2. Its increase or decrease this year? Decrease, 15 per cent.

3. The estimated number of acres devoted to this product, and the quantity and quality produced? 3,500 acres; 5,300 tons; quality not as good as usual.

4. Other important crops? The early spring was very wet, retarding farm operations and making it difficult to get lands in very good order for planting. From May to September the drought was very severe; the Indian corn crop was also more than usually injured by worms and other vermin. *Wheat.*—A good crop, though rather less than that of the previous two years; average this year perhaps 22 bushels per acre, and total in the county, 12,000 bushels. *Oats.*—Less than usual. *Indian corn.*—Suffered much from drouth and vermin; the product of shelled corn, however, is unexpectedly large in proportion to the weight of stalks; a crop of over 100 bushels is reported to the society. General crops much less than usual average. *Vegetables, &c., for market.*—The area of market garden products was considerably increased this season, but the product, owing to the drought, was small; yet the prices in market have been unaccountably low.

5. The number of acres devoted to tillage is slightly increased.

6. There has been a small addition to the good breeding stock of horses, cattle and swine.

7. There has been a manifest improvement in the agricultural character of the county. I regard the trials which have been made of guano, bones and night soil, as substitutes for the usual manures; of pipes for draining, and of improved implements, particularly of the new "*deep-tiller*" plows of Ruggles, Nourse

and Mason, which competed with great success at our plowing match, as extremely valuable in this respect.

8. The increased *saleable* value of farms I should estimate at 10 per cent.

ROCKLAND.

REPORT. A. B. CONGER, PRESIDENT.

The eighth Annual Fair was held at the New City on the 3d and 4th days of October, and by the large concourse it attracted, and the unprecedented accession of new members, manifested the gain it had made upon the consideration of the county. The cattle show was esteemed larger and better than that of any former year. The exhibition of fruits, flowers and agricultural products, were all that could have been expected from a region suffering under the severest drought. To save this report from any appearance of diffuseness, it will suffice to add that the annual address, which was of the highest excellence both in the choice and point of its subjects, and in the felicity of style and delivery, was given by the Hon. Jno. A. Dix, to a large auditory, and briefly to specify some of those measures which were adopted to advance the society in its usefulness, and in the favor of the county at large.

The premium list, after a careful revision and judicious extension by the officers of the society, was found to be nearly *double* that of last year, and exhibited this prominent feature, the encouragement of competition at the fair of all articles of manufacture within the county subservient or incident to the wants of the farmer. *Books*, illustrative of the occupation of the agriculturist, the horticulturist, &c., as well as the Transactions furnished by the State Society, were generally distributed in part payment of the premiums awarded, and in all cases a book plate, ornamental in its device and execution, was attached to the inside of the cover or the fly-leaf of the volumes so distributed. Badges for the use of the members of the society were worn, as well as tents, purchased by the society, were erected for the first time. And (as in the judgment of the undersigned, was a measure of the highest utility to the society, and well worthy of introduction by the societies of the sister counties,) *honorary memberships* were conferred on those cultivators in the vicinity of the county of Rockland, who had or were supposed to be willing to place some of their choicest products on the tables arranged at the annual fair on *exhibition* only. It will be at once seen that the standard of excellence would be insensibly and effectually advanced in the minds of competitors, as well as the resident community who would attend the exhibition.

ST. LAWRENCE.

Agricultural Meeting at Canton.

At a meeting of the farmers and other citizens of the town of Canton, held at the Court House on the 16th of December, inst., to aid the formation of a County Agricultural Society, Thomas H. Conkey, Esq., was appointed Chairman, and Henry Barber and John L. Russell, Secretaries.

After discussion of the subjects of the meeting, on motion of Rev. Hiram S. Johnson, the following resolutions were adopted:

Resolved, That agricultural societies have proved an efficient means of improving both the quantity and quality of agricultural products.

Resolved, That we regard the immediate formation of a County Agricultural Society in this county as important to the bringing into general notice the agricultural products and resources of this region, thereby giving to our county the rank which it may fairly claim among the numerous counties of our State.

Resolved, That as agriculture is the basis of commerce and all other business operations, it should be the interest of the whole community, and especially of farmers, to secure its perpetual improvement and prosperity.

Resolved, That the claims of agriculture to the patronage of the national and State governments are second to no other interest, and in our opinion, the great reason why it has not been liberally patronized is to be found in the fact that farmers have not asked that patronage which their legislators may consistently bestow.

Resolved, That our county, by a wise and judicious course, may soon have not only an efficient organization, but show grounds well fenced and convenient for holding their annual fairs, with good and respectable buildings and offices for their business transactions; and that no county in this State has greater elements for sound agricultural prosperity, than St. Lawrence county.

Resolved, That every farmer may enrich every acre of land which he cultivates, and that every animal he raises may be improved, and that enriching his soil and improving his animals is the only safe system of farming.

On motion of Joseph Ames, 2d,

Resolved, That Ebenezer Miner, Thomas H. Conkey, Hiram S. Johnson, Luman Moody and John L. Russell, be a committee for the town of Canton, to attend the county meeting to be held for the purpose of organizing a County Agricultural Society, and to transact all business necessary to complete such organization.

On motion of Henry Barber, esq.,

Resolved, That this meeting tender their thanks to the county press for publishing the proceedings of the recent county meeting, and will be gratified by similar publication of the proceedings of this meeting.

At a meeting of the delegates held at the court house in Canton on the 28th January, 1852, the St. Lawrence Agricultural Society was permanently organized by the adoption of a constitution, and the election of the following officers:

President, Henry Van Rensselaer, Ogdensburgh; Vice-Presidents, Uriel H. Orris, Massena, Jonah Sanford, Hopkinton, Hiram S. Johnson, Canton; Secretary, Henry S. Foote, Ogdensburgh; Treasurer, Ebenezer Miner, Canton, and twenty-eight Corresponding Secretaries.

The following resolutions were adopted:

Resolved, That while we are in favor of a fair appropriation of the public funds for the promotion of agriculture and the interests connected therewith, we are opposed to its expenditure in a central location for the establishment of an Agricultural College or any similar institution.

Resolved, That it be recommended to the farmers of each town to form clubs for the purpose of taking and reading agricultural papers.

SCHOHARIE.

Report. By Charles Courter, president.

The Annual Fair of the Society was held at the village of Cobleskill, on the 15th and 16th of October. The weather was cold and unpropitious, yet early on the first day of the fair a large throng, and much interest seemed to be manifested in the exhibition. There was a fine show of horses, cattle, sheep, and swine, and the quality of the stock exhibited afforded decided evidence that the farmers of this county are devoting their attention with increased vigor to the improving of the quality and breeds of their stock—that they have discovered the advantage and increased interest it affords them to substitute the noble and spirited horse for the nag—the noble and stately ox for the brawny little specimens some of them have so long raised—the large long wool sheep, for the heavy merino, that cannot endure our climate—and the small-boned, short-nosed pig for the long-legged, long-nosed, large-eared stock that has for years been raised by many. Among the finest of the stock were six fat weathers, exhibited by George Goodyear, Esq.

For premiums on field crops there was considerable competition. (We desire to call particular attention to the crop of wheat grown in this county, a statement of which is annexed.) The first premium for best acre of wheat was awarded to Jedediah Miller, Esq., he having raised 45¼ bushels of bald white wheat per acre. The land upon which said wheat grew descends to the south-east, is dry, of mold inclined to clay. It was in sod thickly coated with stable manure and turned under and planted with corn in 1849. The corn was manured freely with ashes and plaster in the hill while growing. In 1850 it was sowed to barley and peas; and when that crop was taken off, it was plowed and sowed with the wheat above mentioned in September of that year. To Charles Courter, Esq., the premium was awarded for the second best crop of wheat, having raised 39½ bushels per acre.

To Nicholas Russell, Esq., was awarded the premium for best crop of peas, having raised 52½ bushels per acre. The land on which this crop was raised, was of loam and clay soil; there was about five acres in the field. The two crops preceding the corn were entire failures. In the winter of 1849-'50, 103 loads of stable manure were drawn on the lot. The next spring it was plowed deep and planted with corn; of which it produced a good crop. In May, of the last season, after deep plowing, peas were sown, from which above crop was produced.

The society having experienced much difficulty heretofore in procuring a suitable place for exhibitions of domestic manufactures, fruit, &c., procured a spacious tent for that purpose, and found that thereby the interest of the exhibition was very much increased. Under this tent were exhibited some fine butter and cheese, and a large variety of beautiful apples, pears, peaches, quinces and grapes. The peaches exhibited by Mr. John C. Shutts, and varieties of quinces exhibited by Mr. David Dietz, and Lyman Sanford, Esq., it was believed, would compare favorably with any raised in the State. Considerable attention is being paid to the culture of fruit in this county, and farmers find that a portion of their time and attention can be pleasantly and profitably devoted to the improvement of their orchards.

There was a very large exhibition of domestic manufactures; of those articles, the following extract is made from the report of the committee designated to award premiums thereon: "They have been much gratified with the examination of the various articles of domestic manufacture presented for their inspection, that in their opinion it speaks favorably of the industry and ingenuity of the ladies of Schoharie county, in manufacturing and preparing, with their own hands, so many of the necessaries, conveniences and luxuries of life, and that it proves to a demonstration, that there are abundant ways in which women may be agreeably and pleasantly engaged without resorting to conventions, and that too without changing their avocations, their social relation or their *costume*. When all the various articles presented to your committee are so well worthy of commendation and praise, it is difficult and almost impossible to discriminate."

There were a good many miscellaneous and fancy articles on exhibition, not mentioned in the list of premiums. The following are extracts from the report of the committee to award premiums thereon: "But few of the articles contained in the list for examination are mentioned in the list of premiums of the society, yet all are truly deserving of favorable notice, and your committee only regret that they have not premiums, sanctioned by the society, to award those. The committee cannot pass over the fine exhibition of oil paintings, without expressing their great gratification at these beautiful specimens of art. Some presented by Mrs. Hawes, of Cobleskill, are worthy of particular notice, as no premiums are desired for them. In looking upon one of the paintings, we almost thought we were standing by the far-famed Lake Geneva, and from its banks could hear issuing from the prison cell the lamentations of the lonely prisoner of Chillon."

There were but few farming implements that were manufactured in this county on exhibition. The most important of which were some fine plows, manufactured and exhibited by Shibbley & Woolson, of Carlisle.

The executive committee of the society awarded as premiums, $173.25, and 25 volumes of Transactions of State Ag. Society, and 25 vols. of Transactions of American Institute.

On the first day of the fair, B. P. Johnson, Esq., Secretary of the State Ag. Society, delivered an eloquent and instructive address, which produced considerable enthusiasm among his auditors. On the second day, Jedediah Miller, Esq., was called out, and addressed the society briefly and with ability.

The society has experienced some difficulty in relation to articles entitled to be admitted for premiums, and in procuring proper statements of the culture of field crops. To obviate these difficulties, and enable the members to know what will be required, a committee were appointed to prepare by-laws for the regulation of the society.

At the close of the exhibition, the following officers were elected for the ensuing year:—Peter S. Danforth, of Middleburgh, President; Six Vice-Presidents; N. T. Rosseter, George Manning, Peter

Z. Swart, Volney Danforth, David Becker, Executive Committee; Nathaniel Manning, Secretary; Henry E. Watson, Treasurer.

SARATOGA.

REPORT. L. E. SMITH, PRESIDENT.

The farmers of the county of Saratoga, having witnessed for several years the benefits and advantages derived from agricultural societies, have dismissed the doubt which, in the early days of the organization of the county society, retarded its growth and impeded its action. For eight years the society struggled on to gain an existence, until it adopted the experiment of enclosing the ground and charging an admission fee, which has proved so successful that the most sanguine have more than realized their expectations, and those who opposed the experiment are silenced by its complete triumph. To give some idea of the opposition to the experiment, I refer to a remark of an ex-Senator of this district, who declared it would break down the society if the members persisted in that course. On the contrary, a generous support is now afforded from a large number of towns in the county, and the annual fairs and cattle shows are looked forward to as festivals and holidays, where families from all parts of the county may assemble, forming new friendships and for the interchange of opinions. The great increase in the number who attend the fairs, (which is known by the increase in the treasury,) shows the increasing interest felt in the community in favor of these associations.

The opportunity presented to the farmer to improve the breed of his stock, and the great advantage to the mechanic to exhibit his mechanism, and to the inventor to show his inventions; and, in fact, the advantage to all parts of the community demand that a larger appropriation be made by the Legislature for the support of their several county societies. The expense of keeping up these societies is beginning to be felt by those who have sustained them, and the small appropriation of $8,000 by the Legislature to the farmers and mechanics of this great State is a mere drop in the bucket. If the Legislature should double the appropriation, it would no more than pay the yearly expense of keeping up the fences, buildings and fixtures for the fairs (and other necessary expenses) of the several counties from whence so much good has arisen. I hope the State Society may press this matter upon the Legislature. The fact that so much good has arisen to all parts of the community, calls for the fostering care of our Legislature, heretofore so little bestowed in proportion to the encouragement given by it to most of the professions.

The eleventh Annual Meeting, Fair and cattle show of the Saratoga County Agricultural Society, was held at Mechanicsville on the 9th, 10th and 11th days of September, 1851, and was more numerously attended than any previous exhibition of our county society, notwithstanding the sultry and dry weather. Since last year, through the liberality of a few citizens of Mechanicsvile, another large building has been erected as a floral hall for the special convenience of the ladies, always an essential part of these exhibitions. With this addition, we have a fair ground complete for several years to come. The first day was devoted exclusively to the entering, registering and arranging the animals and articles for exhibition. The second day was devoted to the inspection and examination by the judges. At two P. M. of the third day, the society and a large number of spectators assembled around the staging in the show grounds to listen to the annual address and the reading the reports of the committees. The address was delivered by the Hon. J. W. Fowler, Principal of the State and National Law School at Ballston Spa. His address, which occupied near two hours, and was listened to with rapturous delight, was a most masterly effort, fully sustaining the high reputation of the speaker for true eloquence and unsurpassed oratorical powers. The receipts at the gate during the fair were about $550, being some twenty-five or thirty more than any previous year, and $50 for life membership, making $600, nearly as much as was taken in five or six years previous to the establishing the fair at Mechanicsville and of enclosing the grounds.

The exhibition of horses surpassed in number and quality any previous exhibition of the society, and equal to any county exhibition I ever attended. The exhibition of cattle was uncommonly good, there being a very large number, and many very fine animals; the oxen could not be beat by any county in the State; sheep and swine were few in number, but excellent in quality; the small number present, was owing to the extreme hot weather, the thermometer ranging between 90 and 100 in the shade. The same cause, undoubtedly, prevented the farmers from bringing larger quantities of butter and cheese. The show of vegetables and fruit was large and fine, and would have done credit to the most extensive gardeners and nurserymen; there were large assortments, and some extraordinary fine specimens both of fruit and vegetables. The collection in the floral department was not so extensive as last year, in consequence of the dry hot weather; but the specimens were quite as beautiful, and reflected great credit on those who sustained this part of the exhibition, the center of attraction and a great source of revenue to the society. The show of household productions was very satisfactory, and exceedingly creditable to the industry and skill of the competitors. A great variety of articles was exhibited under the head of miscellaneous, all of which contributed much for the exhibition. Some beautiful specimens of linen thread manufactured by F. W. Farnham & Co., Cohoes, New-York, were exhibited, and excited great attention; they had specimens of thread and flax of the American, Irish, Dutch, Flemish and Russian flax, and are carrying the art of manufacturing thread to the highest degree of perfection. I am informed that the machinery is to be moved to Mechanicsville, and that the business is to be carried on under the name of the American Linen Thread Company. In fact, all parts of the exhibition were well sustained, and exceeded any previous exhibition of the society. The following are the officers for 1852: President, Hon. Abraham Leggett, of Stillwater; 1st Vice President, Philander Bennett, Mechanicsville; 2d Vice President, George B. Powel, of Milton; Treasurer, Charles W. Farnham, of Mechanicsville; Corresponding Secretary, S. G. Eddy, Stillwater; Recording Secretary, John A. Corey, Saratoga Springs; with an executive commitee of two from each town. Our accounts for the year are as follows, viz:

Received from State,	$121 00
For life membership,	50 00
Received at the gates,	555 43
Total,	$726 43
Cash paid for premiums of this year,	$453 27
For incidental expenses,	120 66
Paid of last year's debt,	152 50
Total,	$726 43

SENECA.

REPORT. JOHN L. EASTMAN, PRESIDENT.

The last Annual Fair and Cattle Show of the county of Seneca, was celebrated on Thursday and Friday, the 9th and 10th of October, at the village of Waterloo. The weather was beautiful, the roads dry and good, every inducement for the farmer and mechanic to attend, and to bring with them such articles as they might have worthy of exhibition. I am much gratified in being able to state that the attendance was unusually large, many of our friends were present from different parts of the county, and evinced an increased interest and zeal in its prosperity and welfare. They were truly holidays.

The first day was devoted to the exhibition of stock, household products, machinery, mechanics, agricultural implements, fruits, flowers, and vegetables. The second day to the plowing match, annual address, reading the reports of ths various committees, and announcing the premiums to the successful competitors.

The show of cattle was not as large as on some former occasions, especially working oxen, but those that were on the ground, were as a whole, superior cattle of the different grades.

The display of horses was good and highly creditable to the county. There has been evidently an improvement for the last few years, growing out of the importation of the Alfred and Morgan stock. The former for the farm, the latter for the carriage and road. The exhibition of sheep, for a wheat-growing county, was large. Among the different breeds, the merino was the most numerous, and to my fancy, are the most profitable, when we take into consideration the amount and quality of wool shorn. Reed Burritt, of Tompkins county, exhibited his French Merino buck, a late importation, a noble animal, worthy of commendation. I trust he will be amply rewarded for his trouble.

Under the head of swine, there was but one exhibition, which is very much to be regretted, when we have in the county many breeds that are very valuable, such as the Berkshire, Leicester, Byfield, and a late importation of the China and their crosses.

The household products were not as numerous as on some former occasions, but were good, and worthy the premiums awarded them. The woolen shawls from the Waterloo factory were superior articles, attracted much attention, and added much to the beauty of the court-room, but were not entered for premiums. The articles that came under the list of discretionary premiums were very numerous and variegated, many of them exhibiting much taste, elegance, and ingenuity. Under the class of mechanics and machinery, many valuable articles were exhibited, though far less than we ought to expect, at our annual fair. It is to be regretted that the display was not larger, and that our mechanics (who merit the name,) would not all enroll their names as competitors, that their work may be better known throughout the county.

The committee on draining, drain pipes and tiles, gave a very able, interesting and instructive report, which ought to be printed and spread far and wide, setting forth their advantages, &c I would remark, that many of our farmers, have, within the last few years, given their attention to reclaiming their low lands, by means of under-draining, and have been much pleased with the result; in many instances have been remunerated in the succeeding crop. When stone are not to be found on the farms to lay in the drains, our farmers are procuring tile from Mr. Whartenby's manufactory, in the village of Waterloo, where orders can be furnished to almost any reasonable amount.

The exhibition of fruits, flowers and vegetables was very fine, when we take into consideration they were more or less affected by the mildew, blight and early frosts. On the evening of the first day, the Rev. Edward Lord, of Romulus, delivered an address on horticulture, to a numerous audience, at the court house, which was listened to with much interest and pleasure.

On the morning of the second day, the society repaired to the ground which had been selected for the plowing match; the number entered as competitors was unusually large, about twenty. The plows used were the Seneca county, the double Sub-soil Michigan, and others from different manufactories; as a whole, the work was well performed, but the double sub-soil, of a small size and drawn by two horses, was considered by the committee the best specimen of plowing, leaving the ground in a very loose and friable state. This plow, in the north part of the county, where it has been most used, is held in high estimation.

The annual address by our friend and fellow citizen, Mr. Sentell, of the Seneca Observer, was delivered to a full audience, in the Presbyterian church, (the court house being insufficient to accommodate the mass of people,) which was followed by J. Delafield, President of the State Society, in his usual happy manner, and full of instruction. The address by Mr. Sentell, evinced a knowledge of his subject, practically, as well as scientifically.

The winter meeting of the society was held pursuant to notice, on the 5th inst., at the village of Berrytown; the treasurer's report was read and accepted, which stands as follows:

Balance of last report,......................	$29 93
Balance of voluntary subscriptions from Ovid, as of last year, in full,....................................	35 00
Waterloo subscriptions in full,........................	287 00

Cash received from members,	$99 00
Treasurer of the State of N. Y.,	74 00
from sale of county Transactions,	12 25
from sale of lumber used at at the fair, after deducting charges and expenses,	8 06
	$545 24

The amount of disbursements since the last annual report is as follows:

Cash paid for premiums,	$319 25
balance due for printing, county treasurer,	89 13
for printing for society,	27 30
committee of arrangements for lumber, labor stationery, &c.,	59 35
100 diplomas and Treasurer's portage,	8 85
Balance on hand Dec. 19th, 1851,	41 36
	$545 24

Officers elected for the year 1852.—President, John Delafield, Oaklands; ten Vice Presidents; Treasurer, John D. Coe, Romulus; Secretary, J. W. Bacon, Waterloo.

Lodi, *Jan.* 6, 1852.

J. Delafield, Esq., *President*—Dear Sir: In reply to your interrogatories, a few weeks since, I would say, as the result of my inquiries and observations, that wheat is the principal product.

2. The number of acres harvested is about 36,000; the quantity diminished one third, and the quality rather inferior. The growth of straw was large and well cured, and promised an abundant crop. The cause of the failure was the depredations of the wheat midge.

3. Corn two-third crop; barley the same. Hay and oats good, the latter unusually so, the season being well adapted for the oat crop. Potatoes light, but free from rot.

6. Increased attention is paid to improvements in agriculture, and an increased circulation of agricultural papers
7. Farms stationary.

I think I can say that the interest in our society is daily increasing, and that the prospects are, we shall have a full attendance at our annual winter meeting at Barrytown on the 5th of next month. Hope you will be at home ere the day arrives, so that we may have your presence and counsel to encourage us onward in our noble and honorable calling. I hope petitions for an agricultural school will pour in upon our Legislature in such numbers that *they will feel* that *we know our rights*, and are *earnest* in our *solicitations*.

REPORT. DRAINING MACHINES, IMPLEMENTS, &c. JOHN JOHNSTON, CH'N.

The attention of farmers to the necessity for draining their lands, has been called pointedly to the subject within a few years, and the result has thus far been satisfactory and profitable.

Scarcely a farm exists but some part or portion of it will exhibit a constantly moist surface, or, a dry surface with a wet subsoil; in either case the saturated soil naturally generates acids injurious to our cultivated plants, and it is well known that when these saturated soils are removed and exposed to warmth by sunshine, decomposition will take place, and the excess of acid is destroyed, yielding in this condition a good manure.

The fact that wet soils will not produce well developed plants is known to every man of the commonest observation; yet it is not so well understood that *wet subsoils* do most seriously interfere with our farming products. We would earnestly advise the farmers of Seneca county to consider the condition of all their fields more closely, and not to be confident in the *appearance* of a dry surface soil, for there is many a field which will bear the plow, yet the crop which follows is poor, and the soil is left sour, cold, and unprofitable. Such fields must generally be left late in the spring, perhaps too late to work favorably; and in the autumn frosts will inflict an injury. In every case, then, where such soils appear, *draining* is the remedy. The water is carried off, the rays of the sun are permitted to act, communicating warmth, the air penetrates, the roots of our plants are enabled to descend and find their natural and proper food: By the act of draining, therefore, many important benefits are promptly obtained by the farmer—his land is improved, his crops are increased, his temporal welfare largely promoted. With these facts strong on the minds of your committee, they felt some regret that no account or statement of drains or draining in the county had been presented to the society. Upon reflection, however, they feel that as it is only two seasons since the introduction of a tile machine into the United States, there has not perhaps been time sufficient for many expensive or decided experiments of draining; upon investigation, it is found that about twenty-eight farms in the county have been in part drained with tiles, and it is known to your committee that in many cases, a vast and decided improvement is admitted by the farmers. As a collateral proof of the benefits derived from tile drains, it is ascertained that during the first season after the importation of the tile machine from England into this country, Mr. Whartenby, of Waterloo, who became the proprietor, made and delivered about 180,000 drain tiles, and that this season he has made about 840,000 tiles and pipes. The committee embraced the opportunity afforded them, to visit the tile works of Mr. B. F. Whartenby, and were pleased to find them in active operation, turning out from two to three or four thousand tiles per day, according to their size. The sheds for drying are near two hundred feet in length, with ranks of drying frames on each side. The mill for preparing the clay is worked by horses, and the clay is tempered by the action of knives, of three-fourths inch metal, and so arranged as to deliver the clay in quantities sufficient to form 5,000 tiles per day.

The buildings erecting by Mr. Whartenby, are so constructed that he can and does prepare drain tiles and pottery through the winter months, thus enabling him to supply the farmers as early in the spring as they can open their trenches. Hitherto the quantity made, barely equalled the demand; but his improved works have allowed him to accumulate a stock of near 150,000 titles of various sizes, which will probably equal the demand for the remainder of the season; we feel pleasure in stating, that the tiles now offered by Mr. Whartenby, at his Seneca tile works, are well made, smooth, and well burned.

As economy in preparing the trenches is important to the farmer, we gladly notice the drain tools manufactured by J. S. King, of Romulus; they are well made, strong, and in shapes calculated to work with ease, and thus saving time, they save cost of labor.

In conclusion, we hope the society will continue to keep this important aid to the farmer constantly in view, until its benefits shall have been brought to the consideration of *every* farmer, that no man need have advantage over another, except it be that one man may have more energy than another; let it be the stedfast desire and labor of the society to point out facts, to encourage the exhibition of objects leading to the acquisition of knowledge and general improvement, and no reasonable man can doubt the greater increase of wealth in the county.

The committee award to B. F. Whartenby as follows: for the best machine for making drain pipes and tiles, $10; for the best collection of tiles and pipes, $3.

SUFFOLK.

REPORT. EDWARD H. SMITH, PRESIDENT.

"The Fair for 1851, was held at Smithtown, September 25th; the day was fine, and a large concourse of people assembled. The entries for competition far exceeded in number those of any former year, and were generally articles of a high order of merit. A large number of very fine horses were presented for competition. Several very fine thorough-bred Durhams and Devons, with a great number of grade cattle, together with the display of sheep, swine, &c., made for us one of the very best shows ever had in this county. I think the last fair has created much stronger interest in the success of the society, than has been before evinced since its commencement.

The agricultural products were very creditable to the producers. In the ladies department, there was very much to call for strong tokens of admiration; in fact, every one appeared inspired with a desire to promote the welfare and duration of the society. A winter meeting for the purpose of awarding premiums on field crops, was held 18th December, '52; but one competitor appeared, Samuel L. Thompson, who presented two samples of wheat, one of the Australian variety, with a yield of fifty-four bushels per acre, the other Canada flint, of some forty-two or three bushels per acre, either of which, were enormous yields for this county, and to which were awarded the premiums offered.

It would be superfluous for me to enter into the details of the climate, system of agriculture pursued, the staple products, &c., as all these have been ably treated on by my predecessors in office; I have only to say that we are rapidly improving in our manner of cultivation, and that far more interest is being taken than heretofore, as is known by the increase of our products in almost every branch of agriculture.

The officers for '52 were elected on the day of our annual fair. Dr. John R. Rhinelander, of Huntington, President; Edward K. Bryan, of Huntington, Secretary; David C. Brush, of Huntington, Treasurer.

The following extracts are from an address delivered before the Agricultural Society of Suffolk county, by Dr. F. Tuthill, in which "the false shame of labor" is very appropriately noticed:

"The day has already come in our cities, that if a man, stout as Milo of old, has a load of wood brought to his door, and he really aches for the pleasure of handling it, yet he must hire a man to pitch it into the cellar, while he stands idly by, nor so much as touch a stick of it on pain of losing caste. If a stout and vigorous citizen, whose muscles swell with an excess of strength, has a load of wood lying on the sidewalk; he may as well hang himself up at once as be foolish enough to save a dollar and saw it up himself; yet if the man has pitched it in, and the grate is down so that he shall not be seen, we are not sure but he may saw on till doomsday, and no one esteem him less a man and a gentleman. If he curry and tackle his own horse, or lead him to the stable when he has done with him, he is unpardonably vulgar. He would no sooner be caught carrying a trunk the length of a block to an omnibus, than stealing a body from a grave-yard; yet he will boast among his friends of the enormous weight he carries in the gymnasium, having paid the fee of thirty dollars a year for the privilege. And his friends applaud his gymnastic expenditure as wise and exceedingly judicious, 'for sure,' they say, 'how can a man live without exercise?' In short, labor, that promises the end of economy, is an abominable thing; that which advertises their imbecility is a source of pride. These soft-handed gentry may be our sons and brothers, but we fancy they must at times feel ashamed of our common father, old Adam, who farmed it in Paradise."

Report of Edward H. Smith in answer to circular of President.

Dear Sir: In compliance with your request, I give the following account of our agriculture. The chief product of our county is Indian corn; the usual manner of cultivation is to turn over the grass sward in the spring; plant it in hills from 3½ to 4½ feet apart; manure from the hogpen, applied in the hill, from which the average yield on good farms may be set down at fifty bushels per acre, though much larger quantities are yearly raised, (by a more thorough system of agriculture than is generally practiced here,) reaching as high as one hundred bushels per acre. The succeeding spring the field is sowed with oats, and it has been customary within the last few years to apply a light top dressing of guano or bone-dust, (say 100 pounds of the former, or ten or fifteen bushels of the latter per acre,) increasing the yield, they amply repay the cost, and leave the land in a good state for the succeeding crop. The oat stubble is turned under in the fall and sown with wheat or rye, and laid down with grass seed. This is much the most expensive part of our system of agriculture; a large outlay is required for manure, and the return from the wheat crop falls far short of remunerating the farmer; but it is necessary that this expense should be incurred to put the land in a fit state for the hay crop, from which we usually receive a large and abundant yield. Our average yield of wheat will not often reach higher than 20 bushels per acre, though there are instances of enormous yield. Mr. Samuel G. Thompson, of Brookhaven, raised, the past year, 900 bushels of wheat from sixteen acres. Capt. Chas. D. Hallock, a near neighbor, raised, from 2½ acres, 110 bushels. And several other of our farmers in this vicinity, have had a yield of over 40 bushels per acre. These must be considered large for our county, and could not have been reached without a very thorough system of agriculture. The above will tend to show the fact that much more attention is being paid to the cultivation of the soil, and that we are yearly increasing in our agricultural products. What the actual increase has been the last season I am unable to say, but have no doubt it is large, though we have labored under great disadvantages in consequence of the severe drought which has so generally pervaded the country.

Much more attention is being paid than formerly to improving the breeds of stock. We have some fine herds of thorough bred animals, but the most of our stock are a cross of the Durham and native, of which we have many very fine animals. Mr. Becar, a near neighbor of mine, has imported, within the last year, a number of very fine Short-horns from the celebrated Bates' herd, which will go far to improve the stock in this vicinity. As to our horses, we claim that they are second to none in the country. Our sheep and swine are also of a superior character.

SULLIVAN.

REPORT. LOTAN SMITH, PRESIDENT.

The Annual Exhibition was held at Monticello, in October; the attendance large. The first day devoted to an examination of the articles exhibited. The annual address the second day, by the Hon. William B. Wright, was an able production, listened to by a large and respectable audience with deep interest.

The display of horses was superior to any previous exhibition. Neat cattle, excellent in quality, though less in number than usual; of sheep and swine, the show was creditable: of fruit and vegetables, the display unusually good; in the domestic department the exhibition was highly creditable to the ladies of the county.

At the Annual Meeting, December 17, the following awards were made on field crops:

To H. R. Ludington, the first premium on buckwheat; quantity, thirty-five bushels per acre; excellent quality; no manure used; seed, half bushel per acre; raised on meadow ground broken up.

To Lotan Smith, the first premium on oats; quantity, sixty-six bushels per acre; raised on corn stubble; no manure used; cost of production, $15.43 per acre; value of crop, $38; net profit, $22.57 per acre.

To Joseph Lounsbury, second premium on oats; quantity eighty-two bushels, from one acre and eighty-three rods; raised on corn stubble; seed, three and a half bushels per acre.

To Joseph Huntington, third premium on oats; quantity, fifty-four and a half bushels per acre; cost of cultivation $11; value of crop, $27.25.

The season has been a very bad one for the raising of good crops, on account of drought, and the day for exhibition being very inclement, has prevented any further or greater exhibition of grain crops.

Officers, 1852.—President, Lotan Smith; Secretary, Gad Wales; Treasurer, Richard Oakley; eleven vice presidents, and an executive committee of six members.

Report of Lotan Smith, President, in answer to President's circular:

Dear Sir—Yours of the 4th inst., came to hand, in reply to your eight inquiries if I thought I could get information from different towns in the county, I would request it through the press, but I have so often asked for agricultural statistics that I conclude it is of no use, for I am satisfied I shall have to wait a long time without getting any information on the subject, therefore I will try to answer your questions according to the best of my ability.

1st. You ask what is the chief products of your county? I answer, it is butter; next to that is raising stock, both neat cattle and horses.

2nd. The increase or decrease this year? On account of the excessive drought this season, there has not been as much butter made as usual, I am unable to say what would be the per cent., but I think it might be set down at one-tenth, it will most probably fall below that. I should mention that this county has furnished in former years, a large number of beef cattle, that have been drove into Orange Co., and from thence sent to the New-York market; I believe this season there has been a very few, probably not a fifth of former years. I may as well state here, that the principal grain crops that are raised in this county, are rye, oats, buckwheat, corn, &c., those crops do well here except corn, that is rather an uncertain crop unless the season is favorable, then we get a good crop and of excellent quality; wheat is but little raised; rye is from five to ten per cent. better this season than last; oats are ten per cent. better than last season; corn is at least fifty per cent. below last year, very little sound; buckwheat about twenty per cent. below last year, although it fell below the standard last year; hay is an average crop in quantity, but superior in quality. I have no means of making an estimate of the number of acres devoted to the above named articles, if they are not to be found in the census. The 4th proposition is answered in the above as well as I am able.

5th. The increase or decrease of the number of acres under tillage for all purposes? The increase is large, there is a large number of acres cleared off every year and put under tillage, of the number I have no estimate, but I think it may be safely set down at 500 a year.

6th. The increase or diminution in the number of animals, stock and the improvement in breeds? There has been a considerable increase in numbers in neat cattle and horses, how great I am unable to say, but it is considerable. A great improvement has been made for the last few years in the quality of stock and horses. The Devon cattle seem to be most popular with our graziers, they are not so large as the Durham, but much finer, and command a better price as well as a readier market; for working cattle, when they are well matched, they will readily command from ten to twenty-five dollars more than other breeds. As to the improvement in horses, I hardly know what to say; there is an evident improvement in horses, but as to what particulars I can hardly say, most of the good stock have been got from stallions owned in adjoining counties. Of these there is a variety. The Mambrinos stand high, also the Wild Airs. The Mambrinos are heavy, compact, well-built horses, and some are very fast. The Wild Airs are a lighter built horse, finer in the limb, but a better foot. Of the other kinds of stock they are better qualified for the farm or team. By way of digression I would just say that I think that a horse whose stock was well established as combining size, symmetry, endurance, and speed, would find an excellent stand here.

In sheep, for the last few years there has been a large decrease. I think I hazard nothing in setting it down at fifty and perhaps seventy per cent. In former years almost every farmer kept a flock of sheep; but now there is not more than one to eight or ten in former years. They are now raised chiefly for butchering, and nearly all the wool is used up by the farmer for stocking yarn. No cloth of any consequence made at home. In the breeds there is a decided improvement. The South-down have the preference for mutton and wool, though the Bakewell are the largest. There are very few if any fine wool sheep in the county.

7. The increase, diminution, or absence of scientific attention to farm cultivation. In answer to this question, I would say, in the first place, that the interest is on the increase. Information is eagerly sought after by many of our farmers in agricultural works, and the subject is talked about much more than formerly; some have come to the conclusion already that unless science is applied to practical farming, success can hardly be expected. Many are beginning to feel the necessity of having analysis made of their soil. I

regret complaints have been made that their soil is wearing out, and for some reason the soil does not produce as usual, and that manure does not seem to raise it as it once did. The oat crop was one of the most sure and productive crops in our county, but after raising a few crops, the soil seems to be exhausted and worn out. Many conjectures have been made in regard to this crop. It seems to leave the ground heavy and hard, and appears to become wet. Now some of our farmers have come to the conclusion that this crop is not doing what they once thought it did, but in fact and truth, that the oat had exhausted it of some peculiar element that was producing the mischief. This same thing is true also of some other crops, but not to the same degree. There are many here who are very anxious to have an agricultural survey made in our county, and analyses made of our soil.

8. The increased, diminished, or stationary value of farms? For the last ten years land has increased in value moderately, but the increased value for the last five years has been more than in ten years before. This is accounted for partly from the fact that there has been a considerable of wild land where their attention has been turned to lumbering, and the peeling of bark. There are a great number of large tanneries in this county, as you will see by referring to the last census. Since the commencement of our agricultural society there is a very evident improvement in farming, and there are many of our farmers receiving benefit indirectly, although they are not members themselves. To illustrate, I will give you one example. There were a few good farmers in a neighborhood together, and concluded to have a society of their own without its costing them anything. Some time after our county fair was held, one of these men called on me when I was passing by to see his crop of corn, which I readily complied with, when he related the fact I am stating; but, said he, we are all beat, and that badly. Thus you see that competition is provoked outside of the society. I could give you many similar examples, but it is unnecessary. I will add that root crops are highly prized here. Turnips are raised to considerable extent for feeding cattle; the flat turnip is not used of late years, though there are large quantities of ruta bagas raised.

This county was formerly one of the best counties in the State for raising potatoes; the land yielded very large crops with very little attention or cultivation, and those of the finest quality, but of late years this crop has greatly diminished, most of the former varieties that were raised here have rotted and disappeared from amongst us, but we have a variety that has been raised here with very little loss since about 1840, called the Yam potato, for particular reference see Transactions of 1848, page 571. This crop still continues as good as in former years, I have not had a bushel affected with the rot in five or six years, although I raise several hundred bushels every year; these potatoes require to be planted early and generally grow till frost comes.

Last summer I received a letter from you, requesting samples of mineral, or any other curious production; I advertised for them in both our county papers, and certainly expected something to have forwarded to the State Fair. I had a right to expect it, for the fact is we have several minerals in the county, viz: lead of a very fine quality, also manganese, is found in several places in our own neighborhood; I will endeavor to procure some to send to the State museum. Agricultural College and Experimental Farm. The same feeling of interest still exists as formerly; we hope to see that subject fairly brought before our Legislature next winter. In regard to the agricultural survey and analysis of soils in the different counties in the State, I hope to see this accomplished without delay. This I consider of great importance to all classes; in fact, I know of nothing that the State can assist to accomplish better than this, and why shall we delay so important a matter? The plan I suggested to you I think will answer, if a better cannot be found; situated as you are, there is no person that I know of so well calculated to bring it properly before the people as yourself; I hope to hear from you on this subject again. I should have mentioned in its proper place, that our native cattle are preferred by our farmers for dairy purposes.

ULSTER.

REPORT. R. A. CHIPP, TREASURER.

I am unable to give you a detailed statement of the condition of the society, as that matter does not devolve upon me in my official capacity; but I can say, that its affairs are highly prosperous, and that the result of the last fair indicated a decided improvement upon previous exhibitions, and that its finances are in a healthy condition.

Officers, 1852.—Richard Hardenbergh, Tuthill, President; Peter Crispell, jr., Hurley; William H. Trumpbour, Saugerties; Joseph Arnold, Arnoldton; Philip Hoornbeck, Accord, Vice Presidents; S. S. Hommel, Kingston, Recording Secretary; William Cockburn, Kingston, Corresponding Secretary; R. A. Chipp, Kingston, Treasurer.

WASHINGTON.

LEROY MOWRY, RECORDING SECRETARY.

The eleventh Annual Fair and Cattle Show of Washington County, was held at South Hartford on the 17th and 18th days of September. The weather was fine, and the attendance larger than last year. The first day was devoted to the exhibition of stock and the various articles offered for premiums. The display of cattle was not as good as the year previous, owing somewhat to the location of the fair, the farmers in that town being mostly engaged in sheep husbandry. The show in that department was unusually large, and consisted of a greater variety of breeds than we have heretofore had on exhibition. The following breeds were represented in great purity of blood, namely, theMerinos, Saxons, Bakewells, Leicestershires and South-downs. The show of Devon stock was the best we have ever witnessed. Although but recently introduced into our county, they seem to be growing in favor and importance, and are destined, we think, at no distant day, to become great favorites amongst our farmers.

The committee on Devons, Hon. David Sill chairman, made the following report:

"This breed of cattle has but very recently been introduced into our county. A few were exhibited at our fair for the first time last fall. We cannot speak of them from any experience either in feeding or breeding them. They come among us, however, with a good reputation, and it is claimed for them by those farmers who have raised, fed and worked them as oxen, that their beautiful uniform dark red color, and extraordinary activity and quickness in the yoke, give them a preference over all others as working cattle; that they are a hardy race, of easy keep, thriving on pastures which would not sustain large and heavy animals, and that the cows yield as much butter and cheese in proportion to the milk as any other breed. To the gentlemen who have, at considerable expense, introduced them, much credit is due; they are entitled to our thanks and good prices for their spare stock. Our farmers are now furnished with an opportunity of trying them as a distinct breed, or by crossing with Durhams or Natives. Your committee notice, with much satisfaction, the growing interest which is manifested among a great portion of the farmers of the county, with regard to the improvement of their farm stock, and are pleased to see that they are no longer satisfied with their old fashioned, narrow, thin-hipped, slab-sided animals, but have resolved to turn them off and substitute the beautiful Durhams and Devons in their stead."

The show of horses was large, and was divided into three classes, in all which were to be found superior and valuable specimens and breeds of this noble animal. The breeds now distinguished as the Morgans and Black Hawks have recently been introduced into our county, and no doubt will prove with us as they have in other sections of the State, and Union, a valuable cross on our fine mares. The Morgans are, without doubt, a most valuable breed of horses *for all work*, as all who are acquainted with their merits are ready to admit. In Walpole, New-Hampsire, where the old Gifford Morgan died, the stock has been in high repute for many years, and has been thoroughly tested and proved, and all admit that the progeny of the old horse possess all the good qualities of any stock, without a single vice. In this State, we are told that as a general thing, the Morgans lack size; but to that objection, the New Hampshire man will reply that what they want in size, is more than made up in *grit* and *action*. It must be admitted that they possess three very important qualifications, viz., great trotting powers, unrivalled courage, and excellent bottom. They have good proportions, fine action, united with great tractability and gentleness of disposition—and what is more important than all other considerations for the farmer and breeder, as soon as they become old enough for service, they command *big prices*, and it is claimed by those who have raised this breed of horses, that they mature early, and will endure as much at five years old as ordinary horses will at seven.

The origin of this celebrated breed of horses is as follows. They are descended from a horse called the Justin Morgan, who was foaled in 1793, at Springfield, Mass. Justin Morgan was sired by True Britton, or Beautiful Bay, and True Britton was sired by the imported horse Traveller. The dam of Justin Morgan was of the Wild-Air breed. The original horse of this breed was imported by Mr. Delancy, of Long Island, his stock proving so fine on trial that he was afterwards taken back to England. The Justin Morgan, sired four horses that were kept for stallions. These were called the "Revenge," who died at twenty-four; the "Sherman Morgan," who died at twenty-six; the "Woodbury Horse," who died at twenty-two; and the "Chelsea Horse," or "Bulrush Morgan," who died at thirty. The celebrated "Gen. Gifford Morgan," was sired by the "Woodbury or Burbank Morgan," and his grandsire was the old "Justin Morgan." The dam of the Gifford Morgan was also descended from the old Justin Morgan. Gifford Morgan died in Walpole, New Hampshire, at the stable of Benjamin Gates, in the year 1850, aged about twenty-two years. The Gifford Morgan possessed one remarkable trait, and that was the great uniformity with which he stamped his stock, and through them upon his descendants, the fine, peculiar qualities of the Morgan race. I have been somewhat lengthy in my remarks about Morgan horses, thinking the subject might possess some interest to the readers of your Transactions.

In relation to field crops, the number of competitors for premiums was not as large as we could wish, nor are our yields as abundant as they should be in a county so largely agricultural, and, embracing as it does, so many intelligent cultivators of the soil· I transmit, herewith, a few of our reports on crops awarded at the winter meeting of the society; not that I think they possess any great merit, but because I think it well for every county in the State to report progress to the parent society, and thus endeavor to stimulate and enlighten each other in the great pursuit of agriculture.

Indian Corn.—First premium was awarded to A. F. Cramer, Middle Granville, raised on one acre, 68 bushels. Second premium was awarded to A. Willard, Hartford, 62½ bushels per acre.

Potatoes.—Jacob Bump, plowed 20th April, and planted the same week, five bushels small Carter potatoes to the acre, hoed twice, cultivator first time, and plowed the second; yield, 200 bushels per acre.

Oats.—A. F. Cramer, Middle Granville, 54½ bushels per acre.

Spring wheat.—Spencer Chapman, 31⅔¼ bushels per acre.

Carrots.—A. F. Cramer, ¼ acre, 202½ bushels.

In concluding my report, I would say that at 11 o'clock of the second day, the plowing match came off. There was but few competitors, but the work was all done in a workmanlike manner. The exercises of the afternoon were commenced by an appropriate prayer by the resident clergyman. The president then introduced to the society and the farmers of Washington county, Professor Norton, of Yale College; his address was practical and theoretical, and addressed to the candid judgment of every tiller of the soil. It was a fine production, and worthy of its learned author; it was filled with practical hints, and was listened to with the closest attention by a large and intelligent audience. "Practice and Theory," said the learned professor, "must go together, and it is their close connection that I am advocating before you to-day. I do not come and say to these experienced farmers about me, that I could take their farms and carry on every department of work better than they. If I attempted this, the consequence would certainly be a failure for want of that practical every day experience of details which is absolutely essential. But I do nothing of the kind; my business is to point out the connections of your practical views with science, to find where are the points on which science can aid you. The scientific man has it for his vocation to study the composition of the soil, of the plant, of the animal, of manures; to learn what are the links which connect them together; what are the laws of the changes and transformation which occur among them. Every fact that he ascertains in his researches, is a direct benefit to the farmer, because it gives him increased power in the various departments of his business."

At the conclusion of the address, a resolution was passed unanimously, that Prof. Norton be requested to furnish a copy of his address for publication, which request he complied with, and it was published in most of the newspapers of the county, which gave it a wide and extended circulation. The professor, by his gentlemanly address and unostentatious manners, has won for himself golden opinions with the farmers of Washington county, and should he ever visit us again on a like or on any other occasion, I bespeak for him a warm reception.

The Annual Meeting of our Society was held at South Hartford, on the second Tuesday of December, at which the subject of a permanent location of our fair for ten years was thoroughly discussed. The meeting adjourned to the second Tuesday of February, when the probability is it will be decided to hold our future fairs and cattle shows at some permanent place; and buildings and enclosures will be erected for that purpose by the town where the society shall decide to locate.

The following named persons were elected officers of the society for the ensuing year:

President, John M. Stevenson, Cambridge; 5 Vice-Presidents; Corresponding Secretary, Milo Ingallsbee, South Hartford; Recording Secretary, LeRoy Mowry, Greenwich; Treasurer, Ahira Eldridge, North Whitecreek, and an executive committee of one from each town; all which respectfully submitted.

Report of Le Roy Mowry, in answer to circular of President.

In answer to the first question: What is the chief product of your county? The products of our county are of so mixed and varied a character, that I am scarcely able to answer your question; rye, corn and oats are all very generally raised by most of our farmers, but I should think *Indian corn* might be called the "chief product."

2nd. Its increase or decrease this year? The corn crop in Washington Co. is a light crop, owing to early frosts, full one quarter of our crop did not come to maturity.

3rd. The estimated number of acres devoted to this product, with the quantity and qualities produced? I am not able to form any correct estimate of the number of acres devoted to the culture of this important crop, but I should judge it would not vary much from one-third of all the land taken up from year to year for cultivation; the quantity produced, I should say would not much exceed on the average, 25 bush. the acre; the quality this year is generally inferior, but the early planted, and that grown on quick warm soil, is of good quality and sound.

4th. The condition generally of other important products? Our other agricultural products are rye, oats, wool, butter and cheese, flax is also becoming an important crop with us; our farmers are also beginning to raise wheat again; this crop is uncommonly fine, and yield good. The *general* condition of all the important crops in our county the past season, is more than an average yield, if we except corn.

5th. The increase or decrease in the number of acres under tillage for all purposes? The number of acres under tillage for *all purposes* exceeds that of any past year, from the fact that owners of flax mills have offered high prices for the use of land in our county for the raising of flax. They have paid from nine to eleven dollars an acre for the use of land after it was prepared to receive the seed, which induced many farmers to break up land that would have otherwise remained to grass; as manufactories increase for working this product in our own county, this is destined to become one of the most lucrative crops which the farmer can raise, if it is not already.

6th. The increase or diminution in the number of animal stock, with the improvement in breeds? I think there has been a gradual increase in the number of animal stock, owing chiefly to the high prices paid for beef for the last two years. I am, however, sorry to say, that there is not that attention paid to the improvement in breeds of animals that there should be; you will, indeed, find in many parts of our county, a sprinkling of the Durham, and occasionally a fine animal; but I am not aware that there is a *thorough bred animal* of that stock owned in the county, *what you and myself would call thorough bred*. We have many good animals presented at our fairs that the owners will tell you are *full blood*; but when you ask them for a pedigree, they cannot produce it. As to Devons, I can speak with more satisfaction; I am myself engaged in rearing that breed of stock, and have spared neither pains nor money to get the best bred stock in the country; and intend to have all my animals as thorough bred as flesh and blood will make them. But I cannot say that my efforts thus far to introduce this stock have been crowned with that success in the way of sales, that I expected when I started in the enterprise. Notwithstanding the stock takes well in the county, and farmers are desirous of getting into the breed, yet, when you come to ask them 50 or 75 dollars for a good yearling, they admire your animals, and commend your public spirit, and take time to think about it; but I do not despair, that cattle breeders in old Washington will yet be fully remunerated for their efforts in endeavoring to introduce high blooded animals in the county. I think I can discover already, a growing taste for improvement in this respect, and I trust the day is not distant, when our county will awake to her true interests in this matter. More attention has been paid to the breeding of horses than any other stock. I have within the last year gone to much expense to introduce into our county the Morgan stock of horses. I have now on my farm two breeding mares, a yearling colt, and a young three year old stud, all sired by the celebrated General Gifford Morgan, and from high blood mares, which will in time, give us a start in that valuable stock of horses for all work.

7th. The increase, or decrease, or absence of scientific attention to farm cultivation? Scientific farming, I think, is receiving more attention with us every year; but I cannot say that we have any really practical scientific farmers; by that I mean, men who take the pains and have ability to analyse their soils, and who know to a certainty the component parts of all their manures; and yet how vastly important it is, that we should all possess this information to be completely successful in our calling.

8th. The increased, diminished, or stationary value of farms? The value of farms in our county, for the last ten years, has been comparatively uniform. If there has been any increase in their value, it is owing more to investments in buildings, than to a higher state of cultivation, or increased production.

WAYNE.

Report. Stephen Hyde, president.

Owing to the proximity of the State Fair to us, and the universal desire of our community to attend its exhibition, there was but one Fair held in our county this fall, and not two as in some previous years. This was held at Lyons, on the 23, 24th, and 25th of September, and the agriculturists and mechanics of our county were well represented. The competition for premiums in the various departments was spirited, evincing a good degree of interest in the improvement and breeding of stock, and the improvement in the implements of husbandry. No one who has witnessed the fairs of our county for some ten years past, but would readily observe a very marked progress in the various breeds of cattle competing for premiums. In the eastern portion of our county, they lead us with their Devon cattle, whilst in the western, the improvement in sheep husbandry is the more prominent object, and in all sections more attention is paid to the stock of horses, as the numerous premiums obtained from the recent State Fairs for our county will show.

The exhibition in the horticultural department was highly gratifying, showing an advance upon our former high position in this branch as second to no county in our State for the variety and perfection of its fruits.

In the mechanical department, many implements were exhibited, evincing skill in construction, and adaptedness to the use intended; amongst others, the seed drills were prominent.

Domestic manufactures are not yet crowded out of our county, though they are rapidly giving place to the improved machinery of the day, and the greater facilities for a rapid production. The plowing match came off with spirit, the work being done in a highly satisfactory manner, and the whole fair was witnessed by a numerous and highly gratified concourse of our citizens.

It is to be regretted that farms and field crops should not compete for the premiums offered more then has been customary in our county. It has been suggested that the requiring of a strict farm account has prevented their being entered for the premiums. Instead of relaxing this requisition it should be retained, and an additional inducement in the premiums would bring out competition. It is also suggested that a premium be offered for the best farm account, not for the best results of farming merely, but for the greatest accuracy in arriving at results. Too many of us, it is to be feared, jump at our conclusions, and know not at what expense they have been obtained. It cannot be more difficult to keep an account with your farm than with your laborer or mechanic. Let us have a dozen farms the coming year applying to be classed with the No. ones.

The year has been one of abundance and plenty; our storehouses and granaries are literally full to repletion, and never have we had more occasion to say, that "our line has fallen to us in pleasant places, yea, we have a goodly heritage."

The wheat crop, which is a staple in our county, never was better in quality, or perhaps exceeded in quantity. The Soules variety is generally cultivated, and is in great favor with both farmer and miller; a new variety has been recently introduced and promises well, known as Blue stem. The weevil, or wheat midge, has been observed to but a limited extent, as it affects the late sown only. That which has been the pest of wheat, the hessian fly or insect, appears to have done its work, passed its day of existence, and left. The barley crop, an important one with our farmers, was unusually good, the moisture and coldness of the early summer was peculiarly adapted to the growth and perfection of this crop. The oat crop also, and from the same causes, was abundant and very prolific. Corn, a very important crop in our county, is receiving more attention at the hands of the farmer, and when put upon soil peculiarly its own, it has proven a good crop this season, but upon cold damp lands the season has been but ill adapted to its perfection, and the crop is short under these circumstances.

Potatoes have not escaped the *blight*, to which they have been subject some years past. The better table varieties are struck with a *blight* or *rust* early in the month of August, (doubtless from atmospheric influence,) the effect of which is like a withering frost. The decay of the vegetable does not *always* follow, but the effect is to stop the growth of the tuber in its stage of formation, and thus prevent any yield. Some of the coarser varieties escape this blight, though equally exposed, and perfect themselves as usual. Much has been said and written upon this subject without having satisfactorily reached the cause; but few subjects present themselves at the present time, more deserving of the attention of the scientific, and some inducements should be given for the further prosecution of inquiries in this direction, for here all are interested.

The hay crop was good, and husbanded in the ordinary manner, too late in many instances for its greatest perfection. Many of our farmers are paying more attention to dairying, and our market has furnished cheese this fall that would do honor to old Herkimer, whilst butter to a very considerable extent, has been furnished for an eastern market. Pork is made more of an object with us than formerly; the increased facilities for reaching an eastern market by means of the railroads, enable the purchaser to give within a fraction, the price of the most favored market, thus benefiting the producer.

Fruit is receiving still more attention with us than formerly; the fair price which the article has commanded this fall, is inducing our farmers to extend their orchards, and this is done with all the knowledge which our Pomological conventions have given the subject, selecting and propagating well known and standard varieties.

A well marked improvement is visible throughout our county in every branch of agriculture; and whether this is attributable to scientific agriculture, strictly speaking, or to a general reading of the many publications of the day, throwing light upon the subject, or mind acting upon mind, and this again upon matter, is not so material as the fact of improvement. The Transactions of the State Society and of the American Institute are consulted, the weekly and monthly publications of the day devoted to the interest of the farmer are extensively read, silently working their way to the confidence of the community, and producing their effects upon the various objects of our pursuit. The successful experiments of our leading agriculturists are watched; each in their turn are doing their share in producing results that advance the interests of all. Many of our farmers are making their wheat crops average 30 bushels the acre, an advance of some seven bushels, for a few years last past; and the increased productiveness of the corn crop is not less apparent, and this not upon the virgin soils, but upon the longest and best cultivated farms. This is attributable to better tilth, and the improved implements of husbandry. Whilst we would commend all that is deserving of it, we cannot but feel that the acme has not been reached yet; that a better understanding of the wants of the soil, more system in the application of manures, accompanied with drainage, would, in a few years, double the products of our county. Town associations are doing their share with us to produce results so desirable. The town of Galen presents a model of this kind, offering as extensive a list of premiums as many county organizations; enrolling the most of its inhabitants as members; furnishing a library of standard agricultural works for the benefit of the association. Its benefits are not easily estimated, and should serve as a model for others.

An inquiry at some of our principal commercial points, shows some 200,000 lbs. of wool purchased and shipped from our county the last year; 644,000 lbs. butter; 525,000 dozens of eggs; 65,000 bbls. of green apples; $50,000 in value of dried fruit; $50,000 in value of peppermint oil. Other statistics could be given, but perhaps the above will show that we have the elements of prosperity with us, and some ability to develope them.

At our Annual Meeting in December, Mr. Eron N. Thomas, of Rose, was elected President; J. D. Ford, Newark, Treasurer; A. Kenyon, Newark, Recording Secretary; R. G. Pardee, Palmyra, Corresponding Secretary.

Unexpended balance of last year,	$86 23
Receipts of the fair at Lyons,	217 00
Receipts from State,	126 00
	$429 23
Expended in premiums and expenses,	211 36
Balance in treasury January 1, 1852,	$217 87

Report of R. G. Pardee, in answer to the circular of the President of the State Society.

1st. Wheat is our chief product; and yet nothing so exclusively as Livingston and many other counties. Our corn crop is enormous; also barley. You will observe in the report of the Canal Commissioners, 1848, our Collector's office, Palmyra, clears 350 per cent more corn, 260 per cent more barley, and 300 per cent more potatoes, than Rochester. At Lyons, our county clears largely.

2d. Our farmers assure me the increase is 10 to 15 per cent. Said one large farmer, near here, "my usual average of wheat is 25 to 28 bushels per acre, but this year it is more than 33 bushels per acre."

3d. Our assessors think that at least two-thirds of the land in our county is under cultivation; and, perhaps, 12 to 15 per cent in wheat.

4th. Other crops as referred to, namely: corn, barley and potatoes. Our early June potatoes have done pretty well, say 200 to 250 bushels per acre; but the Mercers, long pink eye, flesh color, and most other kinds have proved almost an entire failure from *blight*, but *not from rot*. One good farmer had an acre of new strong virgin soil, planted with *six* of the best varieties of potatoes, but all failed, so that the whole acre yieled only 25 bushels.

5th. Our acres under tillage are increasing.

6th. I think our animal stock is, on the whole, increasing, decidedly so in numbers, and quality, and breeds; but more marked in sheep than other kinds.

7th. There is certainly an increased attention to scientific agriculture, although few are much advanced.

8th. Value of farms is decidedly increasing; and why should they not? when for meadows, fruit, tobacco, wheat, &c., they often pay year after year, a net profit of an interest on 100, 200 and 300 dollars per acre.

I notice this fall a smart active demand for fruit trees, exceeding all precedent. Our county is bound to yield very soon a large increase to our fine fruit crops. At least 7,000 Virgalieu pears have been set out for family and market purposes, within ten miles of Palmyra, within four or five years.

WESTCHESTER.

REPORT. R. T. UNDERHILL, PRESIDENT.

In presenting a seventh annual report, the undersigned takes pleasure in congratulating the friends of the society on its continued prosperity. Every year adds to the interest felt in the subject of agriculture, and gives new tokens of a desire on the part of many of our farmers to obtain all the information afforded by recent experiments in "tilling the soil." The interest manifested at our meetings gives renewed encouragement to our efforts in behalf of the agricultural interests of the county. The number of railroads running through the county, in addition to bringing a ready market to our very doors, has not been without another beneficial effect. Villages are springing up here and there along their whole line, and consequently greatly enhancing the value of land. This has created a necessity for dividing large farms into small ones, and the introduction of improved and higher culture, so that a small surface is now made to give comparatively a greater produce than a large one formerly did. Another important effect is, that lands which have lain waste for hundreds of years are now being brought under subjugation to the plow, and the resources of the county thus greatly increased. A wider sphere of usefulness is beginning to dawn upon us, in which all our energies will find ample room to work; and we have never been so well prepared for it. Owing to the liberality and public spirit of the town of White Plains, we have insured to us for three years at least, a large inclosure, containing all necessary buildings, erected specially for holding our fairs. If it should become necessary to locate our fairs in some other part of the county, at the end of these three years, there can be but little doubt that a like public spirit will afford us the same facilities that we now enjoy at White Plains. Our last fair was a good one, and attended by a large number of visitors. It could not fail to be observed that the interest manifested by all was much greater than has ever been called forth before.

The display of stock, though not very large, embraced some of the finest specimens in the county, and among them, (for exhibition only,) the celebrated bulls "Lamartine," and "Lord Eryholme," imported by Lewis G. Morris, Esq. The season was a bad one for fruit; but, notwithstanding, the display was very respectable. It was gratifying to observe that greater attention is being paid to the culture of the choice varieties of pears, which ought at once to supersede the poor kinds commonly grown in the county. The display of flowers was quite attractive, and called forth a full share of admiration. The season was adverse to a large display of garden vegetables. Fine specimens, however, were not wanting on the present occasion. There was a large show of miscellaneous articles, among which, fabrics of domestic manufacture formed one of the most interesting features. Great praise is due to the ladies for many beautiful specimens of their handiwork. A large number of agricultural implements formed a useful and important feature in the exhibition, among which were noticed several new and important improvements.

The plowing match came off in connection with that of the American Institute, and was viewed with much gratification by a large concourse of spectators. The society wishes, if possible, to increase the amount of its awards next year, being convinced that nothing will have a greater tendency to bring out the full resources of the county, than a spirit of liberal encouragement.

WYOMING.

REPORT. N. BRONSON, PRESIDENT.

The Annual Fair was held in Weathersfield on the 24th and 25th of September. In many respects it was not as encouraging as usual, attributable however to the unfavorable state of the weather, which prevented farmers from the remote parts of the county from exhibiting their articles. The show of cattle, horses, sheep, and swine, though limited, was of fine quality. The products of the dairy have seldom been excelled; and the articles of household manufacture were of very superior quality.

On the second day of the fair, was held the plowing match; only two competitors presented themselves, and when the ground was completed, the judges could not agree which was best, but decided that each one was entitled to an amount equal to the first premium. The plows made use of are called the Castile plow, manufactured in this county, in the town of Castile, which I think cannot be much improved.

Although our county is young in years and experience, and, compared to many other counties of the State as to agricultural resources, quite limited; yet I think there is a spirit arising which will develope itself more and more in actual improvement, and finally restore in a great measure what has been lost by bad husbandry. Our society was addressed by the Hon. T. C. Peters, of Erie county. His remarks were beautifully adapted to our circumstances and wants, and well calculated to arouse the people to a sense of what they are doing, and what they can do in order to improve many important facilities that are within their reach.

The Buffalo and New-York city railroad passes through about the center of the county in a northwest and southeast direction, which will probably be completed in a few months, which will enhance the value of real estate which is adjacent thereto, and give a new impulse to all branches of industry.

After the address, the election of officers for the ensuing year took place, in which were chosen for President, Newbury Bronson; Treasurer, John McElwain; Recording Secretary, Leonard Smith, all of Warsaw, and Hugh T. Brooks, of Middlebury, Corresponding Secretary; and were chosen likewise sixteen Vice-Presidents, or one in each town.

The society voted to procure a suitable tent for the use of the society.

Agreeable to the treasurer's report, the society had on hand in Dec. 1850,	$147 88
Cash received of State,	87 00
Cash rec'd by voluntary subscriptions and membership,	87 00
	$321 88

Cash paid for premiums, ...	$166 25
For contingent expenses, ...	83 47
	$249 72

Leaving a balance now on hand, $72.16.

Report of Newbury Bronson, in answer to circular of President.

The communication which you addressed to Mr. Beck, requiring information concerning the agricultural aspects of our county, fell into my hands in consequence of his term of office having expired, and my having been appointed in his place. I have devoted some time to the subject, have written to one of the most prominent agriculturists in each town, and have received replies which are quite satisfactory to me, excepting in answer to your 3rd and 5th questions, which but two or three of them gave the number of acres, for the want of sufficient data upon which to base an opinion, but such information as I have been able to obtain, I proceed to give you, the best description of the state of things here that I can. Two-thirds or three-quarters of the county, being the western part, is devoted to grazing, to the dairy, to the raising of cattle and horses, and wool-growing; twelve towns out of the sixteen which compose the whole county are devoted to the above objects, therefore, in answer to your 1st inquiry, I must say that grass is the chief product.

2. The increase, I think, is near 20 per cent.

3. The number of acres devoted to it I cannot tell; the quantity about 1½ tons per acre; quality good.

4th. The condition of other important products? The wheat crop, being the leading product in the four eastern towns, is of very good quality, but the quantity not as great as usual, say about 20 bushels per acre; the oat crop, in the grazing towns, unusually large, say from 40 to 75 bushels to the acre; the potato crop nearly a total failure; wool-growing is receiving more attention in the county; the quality good; the quantity, per head, about 3 lbs.; the corn crop generally lighter than usual by fifty per cent.

5. The increase or decrease in the number of acres under tillage for all purposes? A fair increase.

6. The increase or decrease in the number of animal stock, and improvement of breeds? A tolerable increase and improvement.

7. The increase, decrease or absence of scientific attention to farming? There is some attention paid to this kind of farming, and it is on the increase, there is a goodly number of readers of agricultural papers.

8. The increased, diminished or stationary value of farms? The price of farms has had a tendency upward for two or three years past, from 10 to 20 per cent.

TOWN ASSOCIATION, PAVILION, WYOMING Co.

At the last meeting of the "Pavilion and Covington Agricultural society," the following resolution was adopted:

"*Resolved*, That the secretary be, and is, hereby instructed to make out a statement of the transactions of this society from its organization, communicate the same to the Secretary of the New-York State Agricultural Society, and ask the insertion of the same in the volume of the Transactions of the said Society; and also to signify our willingness to be considered auxiliary to the State Society."

In compliance with the above resolution, the following statement is submitted, and it is hoped it will be found worthy a place in the records of the N. Y. State Agricultural Society.

On the 17th day of April, 1845, a number of farmers, and others desirous to promote the scientific cultivation of the soil, met in Pavilion, to take into consideration the propriety of organizing an agricultural society. The result of said meeting was the adoption, after due deliberation, of a resolution declaring it "expedient to form a town agricultural society at this time," and appointing "a committee to draft a constitution for the above object." So much of the preamble and constitution, passed at a subsequent meeting, as is necessary to show the object of the society, and its manner of government, is here presented.

We the undersigned, farmers, and others of the towns of Pavilion and Covington, for the purpose of promoting the science of agriculture among us, do hereby form ourselves into a society, and do agree to be governed by the following constitution:

Arts. 1 and 2, give the name of the society, and specify the conditions of membership.

Arts. 3, and 4 name the officers of the society, and define the duties of the president and secretary.

Art. 5. The executive committee shall appoint all other committees that may be found necessary, shall call meetings of, and have general supervision of the business of the society.

Art. 6. It shall be the duty of all members, who may be appointed on committees, to endeavor to obtain all the information in their power relating to the subject assigned to them, and report to the society at its annual meeting.

Art. 7, provides for an annual fair to be held in the village of Pavilion, &c.

Art. 8. All members who present articles of competition at the fair, shall give a statement relating to breed, age, manner of feeding of animals, the manner of tillage, and expense of crops, &c.

Arts. 9, 10 and 11, provide for regulating the proceedings of fairs, the appointment of officers, and alterations in the constitution.

The first business of the executive committee was the appointment, on the 26th day of May, 1845, of "committees to report to the society, at its annual meeting, the result of their investigations upon the subjects respectively submitted, embracing their own experience, and all information they may be able to obtain." Valuable reports were read, relating to the cultivation and improvement of lands, rotation in crops, and the extermination of noxious weeds, &c. &c.

The object of this communication is not so much to give detailed statements, as to show the means used to promote the science of agriculture in this vicinity, hence but brief accounts will be given of the various meetings of the society from its organization to the present time.

The society, in the outset, discarded the payment of money as premiums; thus disconnecting mercenary motives with the advancement of agriculture; and experience has shown the wisdom of the arrangement. The benefits to be derived from the annual comparison of animals and domestic articles, are becoming every year more apparent; and the increased and increasing interest in the fairs of the society, show the farming community to be not unmindful of such benefits, and a determination to avail themselves of them.

The first Annual Fair of the society was held in the village of Pavilion, October 16, 1845. It was said of it, at the time, "that the show of stock was highly creditable to our infant society, and the numerous attendance of farmers and others, showed the deep interest felt for the success of the institution. In the afternoon, the people assembled in one of the churches, when they were addressed by H. T. Brooks, Esq., in an able and eloquent manner. The several committees previously appointed to examine the various articles and animals on exhibition, made their reports, in all respects, as though money was to be paid the owners of the best specimens.

Such have been the subsequent proceedings of the society. Owing to the combination of unfavorable circumstances, (bad weather and the like,) some of the fairs have not been so numerously attended as others. On the whole, the interest of the farming community in the society has steadily increased.

The last two years, the affairs of the society have been in a very flourishing condition. The fairs were more numerously attended, not only by our own citizens, but by many from adjoining towns. The display of horses and cattle was quite equal in quality, and superior in numbers, to many of the county fairs of the same years.

It may not be amiss to say, the benefits derived from town agricultural societies are more substantial in their character than those of a more extended application; at least, such has been the result so far as our experience extends. The territory is so small, that each man can become more thoroughly acquainted with the operations of those with whom he has to compete; and this knowledge stimulates to the adoption of improvements in tillage, and improvements in breeds of animals.

There are no means of knowing what the condition of this vicinity would have been, had no agricultural society existed. One thing is certain, more advancement in the whole circle of farming operations has been observable for the past five years, than in any former period of thrice that duration.

A GENERAL VIEW AND AGRICULTURAL SURVEY OF THE COUNTY OF MADISON.

Taken under the direction of the New-York State Agricultural Society,

BY GURDON EVANS.

In the collection of information for a survey or general view of the county of Madison, every facility has been most kindly afforded by the farmers and other citizens. To the officers of the County Agricultural Society, many obligations are due; and in an especial manner do I feel indebted to Ledyard Linklaen, of Casenovia; Hon. David Maine, of DeRuyter; Rev. Mr. Magennis, and to Alvah Pierce, of Hamilton, for the knowledge of facts and historical incidents connected with the several towns. For the article on the horses of the county, we are indebted to Col. C. D. Miller, of Peterboro, and that on insects is from the pen of the Hon. Geo. Barlow, of Canistota. Several communications have been received too late for insertion. The difficulties encountered, exceeded my anticipations; and the completion of the work is attributable to the kind assistance of many valued friends.

The imperfect returns of the United States marshals, in the record of industrial pursuits is to be regretted, as the county is deprived of a fair comparative view of its wealth and resources; in other respects a hope is entertained, that the survey will exhibit the present condition of the county with truth, and be in some measure conducive to agricultural improvement in the years to come.

GURDON EVANS.

HISTORY OF THE COUNTY.

History is said to be philosophy teaching by example; and example is ever our preceptor, even before we can reason.

A truthful narrative of events connected with the establishment of the European race upon the American continent, with its progress from the ocean to the inland lakes; the interesting circumstances and extraordinary changes in the religious, civil, and political condition of a people increasing in number and in ratio, unknown in the old world for a long series of ages, presents to this age a rich collection of models for study and imitation.

History has rarely collected and recorded so many incidents and wonderful actions within the period of one century, as are connected with the State of New-York; and its advance in civilization, in its seeking for and promoting the useful arts and sciences, in securing the comfort and happiness of man.

The rapid increase of population, swelling the tide of emigration, sent forth its resistless streams of settlers from the sea coast towns and cities, subduing the forests, and pressing the aborigines to more distant wilds; these streams have now risen to mighty floods of human beings, traversing the vast regions of the whole continent. The materials for American History have accumulated beyond the easy record of the historiographer's pen; we have before us admirable outlines of the past, with detached narratives of actions and circumstances as parts of the important collection for our contemplation and example; vast stores of events and transactions, of causes and effects, await the pen of the industrious and competent scholar.

These views press upon the mind when called upon to examine in detail any section of this prosperous State, and the county of Madison offers its proportion of historic examples, interesting and useful.

The recent survey of Washington county by Dr. Fitch, and of Seneca county, by Mr. Delafield, have presented the introduction of civilization and the consequent dispersion or extinction of the Indian titles from this state; a brief allusion, therefore, need be offered to events anterior to the days of our civil freedom, (1774—1784.)

Soon after the occupation of the region near the mouths of the Mohawk, the margin of that river and its waters, formed the entrance and highway into the wilderness; the head waters rising in Oneida county, near Rome, inclined the footsteps of the traveller in a direction north of the position of Madison county, guiding them to the rich lands of Seneca, and to the fertile valley of the Genesee. To this cause may be attributed the later settlement of Madison county, which did not attract notice until more western regions had been subjugated to the plow. The trail of the red men from the Hudson to the Niagara, was mainly along the southern bounds of the small interior lakes, following the branches of the Susquehanna to the present site of Owego and Elmira, thence reaching Catharinetown, and passing through the county of Seneca, traversed the county westward through Canandaigua, Geneseo, Batavia, to Niagara. Thus the chief thoroughfares passed north and south of the region which included Madison county. The same cause prevented the evils of war from disturbing the quiet of its hills, from awakening the wild echo of savage yells, or decking its annals with an unenviable military glory. The extreme northern border is not destitute of scenes and events yet bright in the memory of citizens, who, though few in number, hold fast with tenacity the prowess of their boyhood days. As an incident prominent among revolutionary events, and as it was the probable leading cause to the settlement of Madison, it seems relevant and proper to record it as belonging to the local interests of the county, thus:—

At the period when evil counsels instigated the British government to reward the savages of the forest for spreading their fearful murders among the American families along the Mohawk valley; when Cherry Valley and the beautiful Wyoming were made desolate; then did the revenge of Sir Jno. Johnston, the fierceness of the Butlers, and the wild fury of the chieftain Brandt, find scope and verge for display and exercise. In the autumn of 1780, about 800 men were collected in the neighborhood of Montreal, with rapidity and secrecy; batteaux were in readiness, in which they embarked; they passed through Lake Ontario; without the loss of an hour they passed Oswego, ascended the river; pressing forward on the Oneida branch, they soon landed upon the southern shore of Oneida lake, secreting their boats and stores in a creek known by the name of Chittenango.

If revenge stimulated Colonel Johnston to re-visit the scenes of his earlier days with the fire-brand and sword, the Indian tribes also continued to feel the wrong they had suffered during the campaign of General Sullivan, in 1779. Neither the successes of Sir John Johnston, in June, 1780 nor the destruction of Canajoharie, by Brandt and his followers, in August following, afforded satisfaction to their revengeful feelings. Whilst Col's. Johnston and Butler organized their force in Canada, Brandt collected the Indians at Tioga point; this force ascended the Susquehanna to Unadilla, and were soon joined by the British troops. Colonel Johnston now moved his army on Schoharie, appearing near Fort Hunter on the 16th October. This expedition had been planned with secrecy and skill, and conducted with such admirable order, that no apprehensions of an enemy were entertained, until a sentry on the fort descried a smoke rising at no great distance; a party was sent out instantly to ascertain the cause, and meeting the advanced guard of the approaching enemy, retired unharmed within the fort. The war-marks imprinted by the marauding foe upon Schoharie, were foul stains of blood and fire; destruction and theft seemed to have obliterated every magnanimous sentiment from the invading foe, leaving a stain upon their fame more enduring than the evils they inflicted upon the unarmed inhabitants. In the same spirit, untired and unsatisfied, Colonel John Johnston, with his whole force, followed the valley of the Mohawk, destroying Caughnawaga, on the 18th of October. Over-burthened with plunder, and suffering from fatigue, Colonel Johnston halted his troops at a place called Klocksfield, on the eastern side of Canada creek.

As soon as the news of this irruption reached the American head quarters, General Robert Van Rensselaer went in pursuit of the foe, having under his command a force of 1,500 men. Advancing on the south side of the river, he reached the ford west of St. Johnsville, which was guarded by forty men; unfortunately, General Van Rensselaer halted, and did not advance till the British guard was withdrawn. Next day the army advanced, and crossed the river, led by Col. Morgan Lewis. The opposing forces came in contact in the afternoon; the British troops and Indians gave way and fled, intending to reach their boats on Oneida lake by the shortest route. General Van Rensselaer pressed the pursuit as far as Herkimer. From this place, General Van Rensselaer sent forward an express to Fort Schuyler, (Rome,) ordering Captain Vrooman, with a strong detachment, to hasten forward to Chittenango creek, or its branch, the Canaseraga, and destroy the enemies boats and stores.

When the British troops landed in Madison county, on the Chittenango creek, they left a guard to repair the boats, to keep them in good order, and have them in readiness for embarcation. This guard was surprised by Vrooman, made prisoners, all the boats except two, were sunk. Vrooman was in turn surprised by the arrival of Butler's rangers and Indians in advance of the English force; he was captured, with all his men, while they were at dinner; the whole party were made prisoners of war, without firing a gun.

The escaping enemy were much irritated when they discovered their boats sunk, their stores in a great measure destroyed, and two pieces of cannon at the bottom of the creek; they succeeded in raising a sufficient number of their boats to make good their escape. While the regular troops were hurriedly pressing forward their arrangements for embarcation, their wild allies gave vent to their revenge, by the wanton massacre of three prisoners. Until within a few years a lofty pine tree stood near the place of Vrooman's capture, this tree has been memorable as the "*turtle tree*," from the circumstance of the rude outline of a turtle having been engraved on its trunk. These symbols are the usual means of recording events among the various tribes, and in this instance indicated, that a victory and torture of prisoners had occurred near this tree; the victory was the capture of Vrooman and his party; the torture was the destruction of the three prisoners, and their savage amusement with a *fourth*. An importance has been attached to the latter incident by the Indians, which has caused an annual pilgrimage by the sons of the forest to the turtle tree. The prisoner was bound at the knees and ancles, and thus pinioned was told to pass rapidly between two parallel rows of Indians, armed with clubs and weapons, each of whom was eager for a blow at their victim: the promise of life and honor to be the reward of his reaching the end of the line without serious injury; young, vigorous and clinging to life, the prisoner made nine leaps along the line, each leap extending a distance seemingly miraculous, all for the moment withholding their ready weapons by amazement: at the tenth leap he was struck down, severely beaten, then tied to a tree and burned. The wonderful efforts of the prisoner, each leap was marked, and the foot prints in the soil between each leap, were preserved from year to year by renewed monuments; meetings were held at the anniversary of the event, characteristic dances were exhibited, and attempts were made without success, unbound, to exhibit a power equal to the unfortunate prisoner; the Indians would then disperse. This practice was continued until the year 1815.

John Adams, of Sullivan, was one of the earliest land surveyors engaged on the southern border of Oneida lake; and the late Judge John Knowles settled there in 1805; these persons noticed the pickets erected at the landing place, and have at times found portions of muskets, knives, hatchets, and bullets; fragments of boats have long rested among the drift-wood on the shores; all presenting testimony in favor of this narrative. A rumor was long prevalent, that in the hurry and confusion of escape, Sir John Johnston lost his military chest, containing a large amount of specie, said to have fallen into the Canaseraga creek, in an attempt to cross that stream: be this as it may, cupidity has found many votaries to attempt the recovery of the treasure, as yet without success. Among the idle endeavors in these fruitless objects, a large curb may yet be seen at the Canaseraga outlet, that had been sunk upon the supposed "lucky spot."

The soldiery composing Captain Vrooman's detachment, sent upon the expedition from Fort Schuyler, were mostly Dutchmen from the Mohawk settlements; a portion of these men lived to reach their homes after a long captivity. They remembered their early enterprizes, the rich lands of the Oneida, the streams well stocked with fish, the woods well furnished with game. Among these hardy patriots was Captain (since General) Seber, who, in March, 1790, in company with nine families, started from their first homes on the Mohawk, to visit and people the region of the battle ground, now forming the northern town of the county of Madison. In this pioneer band were included the Pickards, Van Slykes, and Polsleys, names familiar and pleasant to the people of Madison.

Reaching the flats and banks of the Canaseraga, they found it a good and pleasant land to dwell in. Selecting farms contiguous to each other, on a tract now known as the Storms farm, owned by Mrs. Anson Pierson, they opened "a clearing," and cropped the new soil with cereal and other seeds. A most propitious season awakened dreams of permanent prosperity; the rich autumn filled their barns to overflowing with abundant harvests, thus opening the first settlements in the county of Madison with joy, peace and plenty.

The intrusion of this party upon the rightful possessions of the Oneida tribe—the current of white population passing through their country, and guilty of many depredations—irritated the Indian nations far and near. The Oneidas watched Capt. Seber and his party with suspicion and jealousy; ill will increased day by day until their grievances becoming intolerable, they sought the advice of their estimable missionary, Kirtland, who, by his usual prudence and influence prevented violence. By his advice, their sorrows were submitted to the Governor, whose duty it was to measure equal justice to all, imposing upon him the necessity for retarding the progress of settlements, and maintaining good faith with the various tribes.

Measures were adopted to remove Capt. Seber and his party from the position they had selected and cultivated. Orders were dispatched to them directing their withdrawal from the Oneida territory, but the steadfast character of the Dutch, their inflexibility of purpose, caused a pertinacious resistance to a removal. It now became a serious opposition to the law of the land, in addition to an unjustifiable aggression upon the Indians; consequently, in 1791, Colonel Colbraith, the sheriff of Montgomery county, with an armed posse of sixty men, was sent to dislodge the intruders. Unawed by the commands, entreaties, or power of the sheriff, they refused to submit or remove. In this posture of affairs, Colonel Colbraith ordered every moveable effect of each family to be taken from their dwellings and carried to a distance from the scene of action, and then burned the houses or cabins.

The dream of a permanent home vanished; the hardy pioneer, homeless and houseless, was yet indomitable. Sullenly they watched the smoke driving away from their tottering roofs: the Indians gathered around in quiet groups, with hearts more full of sorrow for the white man, than joy for the justice secured to them by righteous laws: they proved that the savage breast enshrined virtues and principles not inferior to their white brothers. Their triumph was complete, and tempered by acts worthy of record. They led the discomfitted settlers to the grounds near which the present village of Chittenango is rising into importance, and granted to them under proper arrangements, abundant space for settlement. Cabins were soon erected—hunting and fishing supplied their early wants, until the earth could yield its abundant stores.

The present Judge Seber was then ten years old when his father's settlement was destroyed; this family, with a few others, removed, afterwards, to the vicinity of Clockville, in the town of Lenox.

Judge Seber relates an incident connected with the early residence of his father's family in Madison county, confirming portions of this narrative. He states that while a bare-footed boy, passing through the wood with his father, he stepped upon some sharp substance, attracting their attention, which, upon examination, proved to be a bayonet attached to a musket, covered by rubbish. Continuing their search, a stack of muskets, which had fallen to the ground, was discovered. These relics roused up the recollections of Vrooman's adventure, which the old man related to his son, while seated on a log, with the fragments of that expedition then lying at their feet. Alluding to the sinking of the boats, he remarked "they were sunk in the creek near this place—let us look for them." Then rambling along the shore of the creek they found one boat near the bank, sunk, apparently filled with sand.

When this first attempt to form a settlement in this region was made, no road had been opened for teams or wagons; an Indian trail extended from the villages of the Oneidas to the cabins of the Onondagas, in a line with which or nearly so, is the route of the present Seneca turnpike, as far as Chittenango, from whence the trail passed to the "deep spring," on the county line, communicating with and through the "eastern door" of the Onondagas.

During the following year, a colony from Connecticut, led by the enterprising brothers Wadsworth, on their way to the valley of the Genesee, opened the first road.

Emigrants from the Mohawk valley began at this time to enter upon the grounds, now comprising the towns of Lenox and Sullivan. They necessarily came in the unauthorised character of "squatters," for no title to the land was held by them until after many years of residence. Among the earliest arrivals, was the family of the Klocks, whose posterity now occupy large possessions at *Clocksville.* The land in these northern towns was found to yield large crops of wheat, and required but little labor in cultivation; consequently, the stronger soils in the neighborhood of Clocksville, were settled before the lower lands, which presented the obstacles of heavier timber and close growing underbrush.

The old uncouth "shovel plow" of the Dutch, could stir but few inches in depth of the soil, on which wheat was sown year after year, until exhausted by constant tillage, and no enriching manures to restore its powers, the culture of wheat was per force abandoned. In after years, when eastern men turned their attention to this region, they brought with them the old "Bull plow," which following the furrows formerly opened by the shovel plow, turned up soil to a greater depth, producing as good or even better crops than when the land was first cleared. These results were gratifying, but the cause was unknown, leaving to the farmers of the present day, the immense benefits of science applied to their profession, teaching the advantages of principles or rules derived from a knowledge of nature's laws, governing every farm operation, and producing in general unerring and profitable results.

Neither grist-mill nor saw-mill offered comfort or convenience to the settlers of this region, until the energy of Colonel John Linklaen caused a mill to be erected in 1794, at Cazenovia. Anterior to this period, the inhabitants travelled with their grist to New Hartford, near Utica, or to Manlius. The road which had been opened to the west by the Messrs. Wadsworth, was worked and very materially improved by the State government in 1794–5, essentially aiding the rapid settlement of the northern section of the county. So rapid was the influx of population, that as early as 1806, Sullivan and Hamilton became half-shires.

As soon as the inhabitants were mustered under the militia laws, the leading spirits formed companies, and among the number was Captain Jennings, whose ambition was to command an artillery corps. Having succeeded in raising the necessary number of bombardiers, his next care was to procure the needful ordnance. Judge Hopkins, at that time doing duty on the bench, made a bantering wager with Capt. Jennings, that the weapons he coveted would be procured upon an order, the form of which should be dictated by him. Jennings assented, when the judge wrote off the following order:—

Great Daniel D.,
We send to thee
For two great guns and trimmings,
Send them off hand,
Or you'll be d——d,
By order of
Captain JENNINGS.

No man was more fond of a joke than the worthy Governor, (D. D. Tompkins,) who probably was made aware of the origin of the order, and that his friend the Judge had "a hand in it." The order was duly executed, to the delight of the Captain and bombardiers. But the joke received new life a year or two after, when Judge Hopkins had occasion to apply with some earnestness to Governor Tompkins for an important favor. The Governor heard the Judge's arguments, and at the conclusion he gravely yet archly inquired if this request was "by order of Captain Jennings."

The wondrous accounts of "the west," floated back upon the old colonies or now new states, exciting the cupidity of many, and the enterprize and love of adventure of all. Among others, Captain Daniel Brown, of Connecticut, had spent his earlier days as a clothier, but at the age of sixty-six years, his ardor was aroused to visit and settle with his family in central New-York, at that time "the far west."

Inducing a few friends to join his family in their expedition, he left his New-England home in the summer of 1791, with the intent to settle in the valley of the Genesee. Unknown events induced this party to take a southern route, and in June Mr. Brown reached the house of John Carr, on the east bank of the Unadilla river. Wearied, and probably dispirited by the encounter of obstacles somewhat formidable to men reared in cities and villages, the party gladly rested with Mr. Carr. The season and the scenery soon dissipated all doubt; the bright cloudless skies—the sparkling river—the song of birds—the sweet repose of all around, the rich earth sending forth abundant stores of vegetation—the entire absence of all strife with man, of all apparent evil—created a calm and self-satisfying sensation which such scenes only can produce. The beauty of the opposite shores, the alluvial flats along the Unadilla valley, presented temptations too strong for resistance. The Genesee was abandoned and forgotten, and Mr. Brown, with his friends, determined to people the west bank of the river, some distance above Mr. Carr's establishment. Thus was commenced the settlement of the town of Brookfield, in 1791.

Their only neighbor, Mr. Carr, was long and familiarly known as "Johnny Carr." This man was sent from England by the Edmeston family, to take possession of and settle a tract of land granted to them by the king. He arrived, with his wife, at the Unadilla, about the year 1770, and they were for a long series of years the only white inhabitants of that valley. During the revolutionary struggle they were carried off by the hostile Indians, retained as captives, and treated with great severity. For years they were made to follow them in all their expeditions of the chase or of war, submitting to every degradation. Time and habit make man familiar with even chains and misery, taking away their sting. Such was in some degree the condition of Mr. and Mrs. Carr; cheerfulness under hopeless servitude returned. Knowledge and expertness in arts unknown to Indian ingenuity gave them favor with their masters, and equality in all things sav liberty, was ultimately established.

The peace of 1782 restored Carr and his wife to freedom, when they sought their wild home on the Unadilla banks: the once cleared field producing wheat and corn, was now covered with briars and under brush; the cabin, which had exhibited the neatness of an English cottage, was in ruins; the wild rose, which twined round a post and seemed to court the kind attentions of Mrs. Carr, was now a ragged plant, broken and buffeted by the winter winds and snows; the gentle birds, which in her solitude became companions and partakers of her care and affection, had deserted the spot in her absence, giving place to the owl's coarse note, or the twittering swallows' nests. By well applied energy, the cabin was again restored, peace and comfort became inmates of that dwelling, and as the tide of emigration carried along westward its stream of human beings, many found food and shelter under Carr's hospitable cottage roof.

In the vicissitudes of pioneer life multitudes are lost to memory, are forgotten and pass away like mist on the mountain's brow; not so with John Carr, though sharp ingratitude assailed him, his name yet lives in kind memories, and the very cognomen of "Johnny," "Johnny Carr," carries with it the sound of affection. He lived to an old age, and died without property. When his employer, the elder Edmeston died, Carr was abandoned to want by the remaining heirs, suffering in his old age, until by the spirited interference of his neighbors, a piece of land was secured to him in fee simple, on which his industry supported him until death. As the agent of a wealthy family, resident in England, Mr. Carr was supposed to have in his possession at times, large sums of money; to secure which, when the perils of the revolution surrounded him, he buried the treasure near to his dwelling: his long captivity and absence from his farm; the growth of wood, briars and weeds, the general extinction of common marks and signs, rendered his search for the buried money toilsome and fruitless; such was the rumor when Carr returned to his home, and like the silly tale of Kidd's money chests, and many like fooleries, they all find believers at this day, as appears by the fresh turned earth at supposed places of deposit.

It was in the neighborhood of this region that Mr. Brown determined to spend the remainder of his days; and, having rested a few days with Mr. Carr, the party selected a position for their first labors on lot No. 82, in the 19th township. The birth day of our nation seemed a most appropriate day for planting the germ of what might happily be a village—perhaps a city. Every preparation was made for the purpose, and when the sun gilded the forest tops, on the 4th of July, 1791, Mr. Brown's axe gleamed through its first rays, raising the first echos of the woodman's song. Other lots in close neighborhood were selected by members of the fraternity on which clearings were made before autumn.

All the necessary and practicable plans for a settlement having been made, and the winter approaching, all the individuals of the party excepting only Mr. Brown and his family, returned to their eastern homes, to recount the wonders and pleasures of the western clime, and induce others to join in the expected benefits and wealth. The winter was severe, taxing the ingenuity and fortitude of Brown to trap or secure the wild deer for food and gather fodder for the few cattle he possessed. These cattle were mainly supported by browsing in the woods with occasional treats of a coarse hay, cut on the Beaver meadow, and drawn home on hurdles attached *to the tails* of his oxen.

In the following year, (1792,) a company of seventh-day baptists, from Rhode Island and Connecticut, purchased thirteen lots in the 19th township; they took possession of their property and divided it among them by lot. The original cost of this tract was about fifty cents per acre, conveyed to the parties by the State. Mr Brown paid the same price for his property.

The spirit of speculation soon placed larger tracts under the control of individuals, and we find that the entire townships No. 18 and No. 20, with the unsold portions of No. 19, were conveyed to M. Myers, I.Sanger, and John I. Morgan, in consideration of 3 s. 1 d. and 3 s. 3 d. per acre. The improvident custom of granting leases for one, two, or three lives, the rent payable in Albany, in products from the soil, was entailed upon a portion of those larger tracts; producing great inconvenience and distress to the owner and to the tenant at this day.

It has been observed in the county of Madison, that the highest grounds, even hill tops, were earlier occupied and settled than the alluvial bottoms or rich valleys; this peculiarity marked the early settlers in most counties of the State, and may be accounted for by the fact that the more level lands were heavy timbered, covered with fallen trees, or overgrown with young wood and underbrush, demanding more labor and more time to clear and subdue, than the higher grounds or hills.

The town of Eaton, comprised in township No. 2, was conveyed originially to Sir Wm. Pulteney, who sold the southeast quarter to

Joshua Leland, Benj. Morris and Calvin Sanger, by whom it was distributed to settlers at the price of $2 to $3 per acre.

In the autumn of 1792, Mr. Stowel, of New Hampshire, Jonathan Bates, from Vermont, with John and James Salisbury, (brothers,) also from Vermont, entered this town to chop and clear a fallow preparatory to a settlement. The Salisburys selected lot No. 94, while Stowel and Bates selected an adjoining lot, which proved to be No. 7, in Lebanon. Aware that their new home was in the depth of a forest, and that the nearest point from which any necessary supply could be derived was the town or village of New Hartford, these hardy young men drove before them an ox, which they slaughtered on their arrival and preserved for use: they brought with them also flour and beans; with this fare, lodging in a bark shanty, with pure air, water and sound health, they chopped the timber which had stood for ages on twenty acres of rich soil. When winter approached, this party retired to Bainbridge on the Susquehanna, intending to resume their labors in the early spring. Mr. Bates, only with his family, reached the clearing in 1793, and for two years were the only settled inhabitants of the town; his industry secured to him abundant crops after a contest with the wild herbage of his soil, yielding to him a return of thirty bushels of wheat per acre.

Colonel Leland and Mr. Hall Morris became residents at Eaton, in the year 1794. A grist mill was erected by Col. Leland at a pond since known as Leland's pond—a saw mill was added, and were, probably, the first mills erected in the county of Madison. To increase the power the waters of the pond were raised, causing an overflow of many acres, on which the waters were so shallow as to produce an impure atmosphere seriously affecting the health of the people; so grievous was the evil that it was deemed more wise to forego the advantages of the mills and preserve health, the neighbors, therefore, purchased the mills, removed them, and drained the waters from the pond basin, thus effecting a perfect remedy for the evil, and recovering much valuable land. During the next year (1795) about twenty families were added to the now fast growing town; among them was Benjamin Morse, also Daniel Abbey, Simeon Gillet and Levi Barney; men from whom has been derived a large portion of the energy, enterprise and wealth which has long characterised this town. In 1806 forty or more families moved in; among them were Thomas Morris and Joseph Morse, both eminent benefactors. A Presbyterian church was erected at Morrisville, in 1807, and a Baptist church at Eaton, in 1816. Morrisville was incorporated in 1833.

The earliest settlers in the town of Hamilton, were Mr. Samuel Payne and his wife, in the year 1794; they were the first white inhabitants of the town. In 1795, Mr. Theophilus Pierce, with Benjamin Pierce, Jonathan Olmstead, Daniel Smith, Elisha Payne, and Nathan Foster, with their families, entered the town and erected their several log houses. The settlement thus commenced, was known by the name of Payne's settlemeat, and subsequently as Hamilton. Mr. Dominick Lynch was the proprietor of the soil, and it is said he was so much gratified by the sale of the first five hundred acres of land, at twenty shillings per acre, that he paid five dollars more than usual to have the deed of conveyance engrossed on parchment, which is yet held in the family. As late as 1812, the village contained one tavern, two stores one meeting house, and about twenty-five dwellings.

In 1817, the Baptist Education Society of the State of New-York, was organized. In March following, an act of incorporation was granted by the Legislature, which act was promptly followed by the establishment of the Literary and Theological Seminary. Madison University was incorporated in 1846, and in 1847 arrangements were made by the two corporations for co-operation, and in August of that year the system of joint action was completed. Endeavors were made in later years to remove the institution to Rochester. These movements were quieted in 1850, leaving the institution free to extend its usefulness and give permanency to its system of education.

The early settlers of Madison county were chiefly drawn from the New England States, and it may not be too strong an expression to say that they have left an indelible stamp on this county, of their industry, intelligence, and high moral tone. This remark is often applied to the settlers of Cazenovia. This town was purchased from the State by the Holland Land Company, and surveyed by their agent, John Linklaen, in 1792. In the year following, Mr. Linklaen undertook the sale and settlement of this tract. His party numbered about sixteen persons; from among them, Mr. Samuel S. Foreman was engaged as a general business assistant, and charged with the disposition of a stock of goods selected and sent forward by the company to supply the settlers with comforts not otherwise to be had. These goods were left in charge with John Post, at old Fort Schuyler, (near Utica,) the only merchant then resident at that place; from thence they were brought as need required along the "Genesee road" to Oneida Castle, being one day's journey, thence to the Chittenango creek, following its banks to the present village of that name. Here the road terminated, and the Indian trails were the only openings westward, southward, or northward.

To reach Cazenovia, Mr. Foreman's axemen cleared a passage to permit the advance of his loaded cart, and with much labor were enabled to reach the summit of the high hill, and set their tent, when the sun had sunk below the horizon; the next day found them at the foot of Cazenovia lake. At this point it was determined to make a settlement. Log cabins were rapidly erected, a store house was built, and an office opened, making a bustling, busy display. Tempting terms were offered to settlers, such as the low price of one dollar per acre for lots purchased by the first ten settlers having families. This offer was at once accepted, and raised up a clamorous demand for like advantages to young new married couples, fast arriving, to share in Mr. Linklaen's novel patronage. Surveys were pressed forward under Mr. Locke, and purchases rapidly effected at a dollar and a half to two dollars per acre. In 1794 a grist mill was built, and a few years after a more effective mill was erected where the village mill now stands.

The old inhabitants of the village often enjoy the pleasures of memory in recounting the obstacles overcome in their early days. They talk with satisfaction on the work done on the lot near the outlet belonging to David Schuyler, where the first furrow was turned in the town with a Mohawk wheel plow. They seem to hear the ringing of the axe as blow after blow fell upon the giants of the forest, making the first clearing on the west side of the lake; and with this clearing is always connected the names of James Green and David Fay. Many talk of the pleasant times when Judge Wright laid out the village plat in 1794, of his sudden call to other parts, and the completion of the plat by Mr. Calvin Guiteau. Others delight in recollections of early military prowess, kept awake and active by scenes of war then too recently enacted to permit the apathy which now hangs over our militia defence. The first parade under Major Moses DeWitt, in the old oak grove at the foot of the lake, was a scene of pleasure, free from modern error or impropriety. The second parade on lot 33 in Pompey, is remembered for the intricacies and windings of the march—when at last an order was given to break ranks, and every man got through the woods as best he might, in most admirable disorder. The following parade was intended to have outshone the usual doings of the west, and in line with a second regiment to be reviewed at Morehouse flats, in Manlius, by Adjutant General Van Horn. The review took place, but mirth was repressed by the death of Major DeWitt, who, dying two days before the review, was borne to his grave attended by the battallion, exhibiting all the usual insignia of sorrow.

A brigade has been formed in Madison county under the command of General Jonathan Foreman. The successful establishment of the Oneida Conference Seminary, in 1825, giving instruction to 250 pupils, indicates, very distinctly, the intelligence and progress of the town and county.

The town of Madison was opened to settlers by Mr. Robert Troup, as agent for Sir William Pulteney. Samuel Clemens, and Thomas Millen, of Massachusetts, were among the first purchasers.

Elijah Blodget and Henry Pond followed at an early day: a company from Rhode Island, purchased and settled the south west quarter of this town, and it is yet known as the Rhode Island quarter. In 1795 General Cleveland, of Norwich, Connecticut, established himself in this town, and attained a good old age. He happily occupies the first framed building erected in this town. Mr. Seth Blair entered upon lot No. 66, in 1798, on which he has been a resident to this date.

It was in the year 1802 that a survey was made of that portion of the county known as the town of Georgetown. The name was bestowed by the Legislature, to meet, in some degree, the wishes of the inhabitants, who had petitioned for the name of Washington; the Legislature being aware that another town existed in this State, bearing that honored name, determined to use the christian name of the noble warrior statesmen, and hence the name of Georgetown. The first inhabitant entered this town in 1804, from Litchfield, Connecticut, selecting, for their residence, lot No. 58. This was Mr. Ezra Sexton; he was followed, in 1805, by William Paine and Michael Attwood, who erected houses on adjoining lots. The houses on the banks of the Otselic * creek are good and attractive, yet much of the town is rough and hilly. The uncultivated rough lands are estimated at about $5 per acre, while the improved lands are worth from $10 to $25 per acre. An interest of no ordinary warmth was excited in this town about the year 1810, in regard to an accomplished gentleman who seemed to seek a sequestered home in the shades of the Georgetown hills and forests: a man of easy address, accomplished, graceful in every movement; courteous, he commanded the respect of all with whom he held intercourse: enthusiastic and intelligent, he was admired: benevolent and charitable, the poor found in him a most sincere friend, yet from whence he came is a mystery; his fate is unknown. In Georgetown he was known by the appellation of Lewis Anathe Muller, and as an exile from France: an obscurity as to his native home, his rank, or objects in life was evidently desired and maintained. For a time the idea was prevalent that the name of Muller was assumed to overshadow Louis Phillipe,

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* Otselic means "*cup full.*"

the late King of France, who was known to wander an exile in America. Dates, however, seem to demolish this idea, and humor has substituted, as more reliable, a statement, that a nobleman of France, strongly opposed to the elevation of Napoleon Bonaparte, expressed sentiments hostile to the consular dignity to which Napoleon was elevated in 1799; these sentiments reaching the consul's ears readily created a necessity for the expatriation of the offending nobleman, who, flying from vengeance, found an asylum in the United States.

Arriving at New-York he was induced to place confidence in a Mr. Ludlow, with whom he deposited a large sum of money, which events jeopardized and led Mr. Muller to accept a tract of land in Georgetown, rather than suffer a total loss of property left in an agent's hands. In this forced manner becoming the proprietor of lots No. 75, 76, 87, 88 and 89, he visited his new acquisition. There is good reason to know that he brought with him to this town, not less than $150,000, and it is feared that when he retired he carried away not to exceed $1,500.

For two or three years after his first arrival he resided in the village of Hamilton; at an early day he commenced clearing his purchased tract; at no time did he evidence any design or desire for accumulation, neither did he ever express a wish to become a permanent resident. With a mind stored with information, with a spirit impelled by energy, he sought objects for the employment of his talents and activity.

A strange yet powerful apprehension weighed upon his mind, and tinctured his prominent movements. In common with the views of the French nation, he believed that the powers of Europe would fall before the eagles of Bonaparte, that the haughty lion of Britain would crouch and yield, and even the American eagle would fly before the gigantic power of the Corsican. These apprehensions pressing upon him, seemed to find some relief in the hope, that the secluded hills of Georgetown would afford to him a residence unknown and unobserved, and a safe retreat from present dangers.

Thus actuated, he determined to erect an edifice for himself and family; the first necessary movement was to fell the forest and clear the grounds: three hundred acres were rapidly opened to the air and sun by the application of a force unusual in this country, and only to be commanded by large capitalists. The house is now standing a monument of taste and liberality, adapted to the luxurious views and enjoyments of Europeans, but ill-suited to the simple, unpretending wants of the American farmer citizen. The building is 30×70 feet, constructed of massive sills resting upon a heavy work of masonry: cherry tree slabs, eight inches thick, and eleven feet high, were framed into the sills, side by side around the entire building, all planed very smooth, and tied together by slats dovetailed into each. The frame work was clap-boarded, then lathed and plastered on the inside; in this manner the whole work was conducted. The expense of so large a dwelling may be appreciated, when it is known that all the brick, lime, iron work, nails and ornaments, were from necessity brought over the hills on the backs of horses. The fire places were trimmed with black marble, and the most costly furniture completed the comforts of the establishment.

A brook traversed the grounds, furnishing water to an artificial pond stored with fish: around this pond he planted every variety of rich fruit, and endeavored to extend every branch of horticulture, but when excavating the fish pond, the surplus earth being gravel and hardpan, was leveled over these garden grounds, rendering them unproductive and destructive. In this department his knowledge was deficient, aad was marked by an entire absence of economy. Ever desirous to encourage the people, he attempted the establishment of a village by erecting two store-houses, several dwellings, a blacksmith's shop, and a grist-mill. In his family arrangements, peace and content seemed constant companions, and enlarged benevolence brightened the hours of every day: the sick and needy found their fevered pulses soothed by personal attentions, and the means for supplying all immediate wants. The sports of the chase and the green were enjoyed largely, and in these amusements the character of Muller was conspicuous; on no account would he attack game of any kind while it was at rest: every living thing had a chance for escape, but that chance was feeble, if his fowling-piece or rifle was in his hands. All persons employed by him were early taught to feel his unflinching, unwavering spirit; any indication of laziness, or inattention to duties required, was followed by prompt dismissal, and never could any dismissed person obtain employment from him again. Such were a few of the characteristics of Mr. Muller.

In 1814, when Bonaparte abdicated and was sent a prisoner to Elba, Mr. Muller returned to France, leaving his wife and children in New-York; he remained in France between two and three years, making arrangements for restoration to his natural and original condition; he then returned to the United States to dispose of his property here. When he reached Georgetown his house was stripped of furniture, his stock and every movable article had disappeared, weeds covered the gardens, the walks, the roads and fields; and desolation marked every object of his former care and pride, his village was forsaken, the mill was deserted. These grievous evils were the results of misplaced confidence in the individual who had charge of the property during his absence; this dishonest person had sold every convertible object and carried off the avails.

In mute dismay Mr. Muller viewed this wreck of his exile home, tears at last gave relief to his oppressed mind. He returned to New-York, promptly disposed of the land for any sum that was offered, returned to France, and to this day no man in Georgetown knows more of Mr. Muller than is here narrated, neither has he been heard of by any of our inhabitants.

Wood and Forests.

The destruction and consumption of timber, in the State of New-York, has attracted the notice of observing men, creating an apprehension of serious inconvenience at some period not far distant: it has also in a great degree, changed the natural distribution of vegetable substances on the surface of our country. It is well known that temperature influences vegetation: the plants of the tropics will not thrive in this latitude: neither will the wheat of this region thrive within the tropics. May we not reasonably infer that the clearing away of the forests, the more easy and rapid evaporation of moisture from the earth with other necessary effects of denudation have, in a measure, changed the climate of the state or affected its mean temperature. If this be true does it not present one cause for a change in the forests of our State often noticed by agriculturists and naturalists?—that is, when a settlement has been cleared, and a second growth of timber is permitted to spring up, the latter growth is not always of the same variety as the wood which has been removed. It is generally and well understood that a growth of sturdy oaks indicates a clay soil: the elm leads us to expect a rich alluvial vale, warm and sheltered; a sandy soil claims the various pines, and from these and other indications of original vegetation, the pioneer could generally judge, with accuracy, the soil of any tract of land within his line of vision.

Applying these remarks to the county of Madison, it is found that most of the southern and middle towns exhibit *the remains* of stately pine trees, mostly the white pine; a few of this variety yet rear their heads. The stumps of these pines which encumber the grounds present a diameter of four and five feet, which warrants an altitude of sixty feet or more, and this is verified by many of the older inhabitants, who represent the former growth of pines, as sending up erect shafts full sixty feet, in perfect symmetry to the jutting out of the first branch. The demand for lumber of this character was greatly increased when the Erie canal was opened, causing it to fall on every lot, and rapidly find its way to the eastern markets. The pines passed away, and the hemlock and basswood became the substitute. Plank roads and other useful objects will, at a very early day, carry off the remaining hemlock. White cedar was once abundant in the wet grounds of the county; a portion yet remains and furnishes durable farm rails and posts. The varieties of oak abounds in the northern towns only. Near to the Oneida lake the prevailing woods are oak, elm and ash, intermixed with beech, birch and maple, while on the line of the canal, stunted oaks, low pines and shrubs cover the ground. Beech and maple prevail in the southern towns; the swamps afford black ash, while the side hills present elm, basswood, wild cherry, and now and then a few hemlocks.

The noble maples, which years ago furnished the families of Madison county with a good and wholesome sugar, have to a great extent fallen under the blow of the axe; where the axe has spared the "maple bush," man's improvidence has hastened decay and extermination. The annual incisions from whence to draw the rich juices, produce exhaustion and imperfect development of the extreme portions of the tree, hence disease and death ensue.

From this department of the forest much sugar is yet made in the county of Madison. Maple trees newly or recently tapped will produce from four to five gallons of sap per day; in favorable seasons an average product of four pounds of sugar has been made from each tree. The labor of one man is sufficient to conduct the process of sugar making from one hundred trees; the time necessary for the production of the sugar in a marketable condition, is usually three weeks: in which time one man will have made from three to four hundred pounds of sugar, worth about ten cents per pound.

Though the timber of Madison county did not at any time give it the character and temporary advantage of a "lumbering county," yet the early settlers were compelled to endure the toils and privations incident to the "clearing" new lands; toils rendered more severe probably, by the non-marketable condition of much of the wood, and the absence of navigable waters for its transportation. Every man who entered the county with a view to agricultural benefits, adopted such methods for clearing the lands as would permit the earliest deposit of seed: To effect this object the usual plan was to fell trees near the line of the intended fences; the butts were split into rails and stakes; the tops were cut into convenient lengths for piling and burning; the underbrush was cut and piled and burned with the tree tops. The stout or timber trees were girdled by making a horizontal incision through the bark and into the body of the tree, cutting off all communication between the upper and lower portions of the bark. By this means the natural circulation of the sap or vital fluids was effectually checked, and the tree withered and died; for many years after stretching its leafless, naked arm to the heat and cold, dryness and moisture of the season, and at last unable to resist the blast, it falls, needing but the torch to remove every vestige.

This system of girdling prevented the growth of the leaf, admitted the sunbeams to the soil, which, with more free admission of atmospheric influences upon vegetable matter, afforded to the farmer a rapid and remunerating product for his labor. The spirit of adventure and enterprise induced many persons to purchase lands with the intent to clear them extensively, and offer them, thus far improved, to the farmers for occupation: finding a large profit in labor thus applied by the increased value of land thus cleared. This system introduced a hardy, though not permanent class of men—men enamoured of the free wild life of the forest and the chase, changing the scene of their labors, as emigration demanded and occupied the "clearings." The process of destruction of the timber is widely different from that of the agricultural pioneer. There is an art and taste in every employment, in wood chopping as well as in merchandize: the art of the woodman is exhibited in his economy of time, his tact in the use of the axe and power of the lever. When he selects the ground for his labors, he times his bargain with reference to the full expansion of the leaf and twig of the season, knowing that in these auxiliaries he finds time and labor-saving friends, as they furnish a most convenient and ready combustible for application to his log heaps and brush heaps; from the months of June to August, therefore, the woodman enters upon his duty—he expects, also, from action at this season, to prevent the sprouting of the stumps, which, if suffered to grow, mar the beauty of his work, and keep alive the roots. The general method of proceeding was to fell every tree, divide the body into lengths of about fourteen feet, cut the tops into portions easily handled, and pile them, with the brush, in heaps, ready for burning. In this condition the whole area is left through the winter, until the first dry days of spring; fire is then applied to the brush heaps, commencing at the windward side, presenting, in a short time, a wide spread conflagration; a scene which, at times, is grand, even appalling, when the heavens are red and every object seems to melt away in the fervent heat.

These burnings have been occasionally, attended by unforeseen and mischievous consequences, as the destruction of adjoining forests of timber intended for preservation, by the proprietor. The most strenuous endeavors of the collected neighborhood have, at times, been unavailing to arrest the torrent of flame, until many hundreds of acres have been swept over. Many hill sides and tops in this and other counties, carry the marks of devastating fires, and the often noticed result of a new or second growth of wood, of a species quite different from the first forest. The first burning of the intended clearing never, or seldom, destroys the large logs or bodies of the trees lying on the ground; the first operation was called the "burning off the fallow," the next is the "logging off" or "log rolling;" this work was arduous and required the united forces of the neighbors far and near. A common interest always commanded a willing hand along all the border settlements, and so universal was this sentiment of good will and mutual aid, that an instance of hesitation was rarely met; every man, boy and team, invited to the "logging bee" was certain at his post on the appointed day—a day, generally, of much excitement and strife in the endeavor of each to excel the other in the number of well constructed log heaps ranged in line, and clearing away the score blocks, and all rubbish from the soil. When the hours of evening approached the boys were actively engaged in firing the heaps, that they might burn during the night, again staining the floating clouds with a crimson glare, and rolling dense masses of smoke to towns far distant, reminding the inhabitants of times and scenes but lately familiar in their own vicinity. The cost of clearing land necessarily varies with the extent of standing lumber, rarely has it been less than three, and generally ranging as high as five dollars per acre. Contracts have been made for clearing and fencing large tracts at from ten to twelve dollars per acre.

The very imperfect plows in use fifty years ago, were unfit to encounter a newly cleared piece of ground, nor could they work with advantage until the third or fourth year, when the smaller stumps and roots having decayed would allow a passage, though very irregular, between the larger stumps. During the first year or two, the seed was sown upon the unplowed surface and harrowed with a rude triangular harrow: this implement was frequently the natural crotch of a tree, into which seven or more iron teeth were placed at regular intervals. Until late years the plow used in this region boasted of a wooden mould board, armed with a steel share affixed by the smith at the nearest village: the mold board having been split from the butt of a winding hard maple tree, and worked down to a thickness of about two inches. Imperfect and cumbrous as these implements were, yet there are those with whom habit is so strong, that regrets have been heard within a few years, that the good old plow had given way to cast-iron and new fashions; this, however, must ever be so, while conceit and vanity are so prominent in our composition, and so difficult to eradicate even in these days of better means for education and the acquisition of knowledge. The method of reaping grain in Europe with the sickle was used till recently in this county, and though the cradle has, to a good extent excluded the sickle, that tool is to be found among the implements of the oldest farmers. The long standing tree stumps, and other surface impediments, were the probable cause for the later introduction of the grain cradle, and the farmers were content in the olden time to reap and bind an acre per day and per man, esteeming this quantum of work a full measure for an able man.

A serious inconvenience was felt in the early settlement of this county by reason of want of grain seed. It will have been noticed that the several towns were settled within a short period of each other, several in the same year, hence a dependance on distant places for seed, for cattle, and most of the necessary and ordinary supplies. The nearest points were New Hartford or Whitestown, by roads or paths indicated by marked trees. At this day it is difficult to appreciate in their full force, the grievous drawbacks and impediments which daily confronted the early settler.

Many and vexatious disappointments necessarily were endured, arising from an ignorance which the farmers of the present day alone have the means of avoiding. The settler on new land supposed and was confident in the belief, that because it was *new* it must be fertile; this error was in a degree confirmed by the fact that the old settled farms at the east were already *worn out*. Now though the latter position might be true, it did not necessarily confirm the first; wheat was the most desired crop, and wheat was indiscriminately sown on sandy, vegetable, and clay soils, it was distributed on the hill tops and on low wet alluvions: how then could disappointment be avoided; they might as well have hoped to cultivate the sugar cane in this latitude, as to sow wheat on uncongenial soils.

Many good crops of wheat were produced for a few years in all parts of the county, but as soon as the light soil was fully cultivated, the wheat diminished, while other grains improved, nor was it discovered until a late day that the county was not adapted to wheat; a discovery which though tardily made, has led the careful farmer to change his system of husbandry, and to cover his hills and meadows with flocks and herds. The heavier soils of the northern portion of the county may, under good cultivation, continue the production of wheat, but the middle and southern towns will hardly attempt it.

During the first years of agricultural effort, it required all available labor for the production of the cereal crops, to sustain the established population with the influx of new comers; this cause in chief, with the naturally rough surface of the fields, precluded for many years, any attention to meadows or cultivated grasses. It was rare to find a *pasture lot*. The luxuriant wild grasses and shrubs afforded an abundant supply of feed for their cattle through the summer, and until late in the autumn. The woods served as commons, where numerous herds fed and browsed, roaming at pleasure, but ever giving note of their whereabouts, by the sound of the tinkling bell, borne by one or more cows in each herd. Every owner seemed to know the tone of his own bells, even the cattle seemed endowed with a like knowledge, for each herd remained distinct, following its leader, and rarely intermixing or straying to inconvenient distances.

Accidents did occur in the spring months, when the cattle were first turned out to roam: they were tempted into wet grounds and marshes to seize the early springing blade, when sinking in the mire, they were too often unable to extricate themselves. The absence of the animal at night was the first intimation of trouble to the owner. Upon such occasions, a hasty summons or signal to the nearest neighbors secured their prompt aid, and with blazing torches the swamps were searched, now and then to rescue and restore the animal, but oftener to witness its loss. It has been no uncommon thing in this county, in former days, to winter a herd of cattle in the woods, there to browse all day on shrubs, with a tree occasionally cut down and the limbs topped, that they may reach them readily, and crop the twigs and buds, for this purpose the basswood tree or birch or maple was selected as the most nutritious. At night they were sometimes driven under cover to receive a feed of straw. Such was the early condition of the county of Madison.

Geography and Topography.

The boundaries of the county of Madison may be thus defined: a nearly east and west line, through Oneida lake forms the northern boundary to the mouth of Oneida creek: this stream forms the north-east and eastern bounds to the north line of Stockbridge—thence east, according to the compass in 1824, two miles and 112 rods: thence S. 25′ E., 487 chains 80 links to the south line of the Stockbridge grant: thence south to the north line of Madison town: thence east 6° south, along the north line of Madison to the N. E. corner of said town: thence along the eastern line of said town to the north line of Brookfield, which it follows easterly to the Unadilla river: thence following the course of the river to the junction with the south line of the 18th township of the Chenango townships: thence west, on the south line of the 18th, 4th, 5th and 6th townships to the east line of DeRuyter, formerly Troup lot 82; thence due west through a tier of lots to the east line of the military tract: thence along said line northerly, to a point where it intersects the Chittenango creek: thence along the said creek to the Oneida lake and the place of beginning. Such is the unmeaning description as recorded, of the bounds of Madison county; a description, from which no chorographer could, with any approach to accuracy, plot the form or figure of the county. The same inexcusable want of precision or correct delineation marks most of the geographical descriptions of the State. Neither can its longitude be given with any certitude, for no observations appear to have been made or recorded, in regard to the longitude of any point or place in Western New-York. The surveyor of Seneca county,* finding a similar difficulty last year, entered into a correspondence with the general and State governments, from which it is earnestly hoped measures will be devised and adopted for making a series of precise observations by which to determine the true longitude of every principal city and village in the State. The nearest means of approach to the longitude of Madison county, is the east line of the military tract. This line is estimated by the Surveyor General to be 1° 2′ 20″ east of the meridian of Washington; this is, however, an assumption, though, probably, not very far from the truth. The latitude is readily obtained, and until more correct observations are procured, the position of the county may be stated at between 42°, 43′ and 43° 10′ north latitude, and 1° 2′ 20″ and 1° 39′ east longitude, from the meridian at Washington.

This county was organized in 1806, and was taken from the county of Chenango: since that date no change has occurred, save only the addition of that part of Stockbridge lying east of the Oneida creek, which was taken from Augusta, in Oneida county. The rapid increase of population demanded a rapid division into communities, the dates of the organization of the present towns indicate the county's growth: Brookfield was organized in 1795; Cazenovia in 1795; DeRuyter in 1798; Hamilton in 1801; Sullivan in 1803; Eaton in 1807; Lebanon in 1807; Madison in 1807; Nelson in 1807; Smithfield in 1807; Lenox in 1809; Georgetown in 1815; Fenner in 1823; Stockbridge in 1839. The division of the county into towns excited from time to time new and rival interests, from which public benefits flowed, and private gain necessarily followed. The most prominent public feature was the extension of roads, and the opening of new avenues in various directions.

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* Mr. John Delafield of Seneca county.

In the year 1800 the Seneca Turnpike Company was empowered to improve the old State road from Utica to Canandaigua; under the vigorous exertions of the commissioners, this road was opened to a width of six rods, during the first season, as far as Vernon; reaching Chittenango in 1801. At an early day a road was opened from Peterboro, through Skaneateles and Cherry Valley.

The construction of the Erie canal opened a water communication with Albany and New-York, forming ports for the import and export of commodities within this county at Canastota and Oneida. The Chenango canal opened a communication from the eastern borders direct to Utica, or south to Binghamton, connecting with the Erie railroad. The Syracuse and Utica railroad has been equally instrumental in advancing the prominent interests of this county, having depots at Chittenango and Canastota.

The influences of the agricultural character of this region seem to be strongly marked in the rapid extension of *plank roads* in various directions: the chief products being wheat and barley, wool, dairy products, hops, and teasles, and the places for deposit being in northern and eastern towns, an easy mode of transportation around or over the many hills and rough places, soon indicated the value of plank roads, consequently in 1848, a plank road was constructed from Hamilton to Utica; another connected Hamilton, Madison and Oriskany, in 1850; and in the same year, Georgetown and Pecksport were joined or linked together by a road passing through Eaton and Leeville. During the year 1851 a plank road was laid from Canastota to Morrisville, and another from Peterboro to Clarksville was in progress. A very principal plank road extends from DeRuyter to the Oneida lake, passing through Cazenovia, Chittenango and its depots, a distance of thirty-one miles. This last named road marks the enterprise of the people of Madison county, it was completed in 1848, a portion of it passing through a difficult valley, which at some points assumed the character of a gorge, and overcoming a hill of 800 feet elevation, by an easy ascent, in no place more than six feet rise in a hundred. The road formerly in use, in going to the canal and returning required an aggregate ascent of about 1,600 feet. This road cost $21,000, of which more than $10,000 was expended in grading; this cost has rendered available and valuable, a water power before useless, whose entire fall is 750 feet, and the greater part of which was previously inaccessible.

The effect of this net work of roads and canals, has brought to the doors of every farmer and inhabitant every article of necessity, ornament and luxury produced in other regions, to be exchanged for such surplus products as the county may yield; it has induced an increase of population and necessarily an increase of labor, of production, and wealth; it may and probably has diminished the occupation of a class of non-producers or traders, because the profits which they intercepted go now more directly to the farmer or actual consumer, thus diverting a capital though not large, into other and probably more beneficial channels, both for the proprietor and the nation

The formation of the face of this county and its elevation, do not admit of the flow of navigable waters; from east to west, and near the center of the county, an elevated ridge forms a dividing line, on either side of which the waters flow north or south. The waters collected on the northern side are received into the basin of Oneida lake, passing thence through the Oswego river to Lake Ontario, and mingling with that inland ocean, they escape, through the river and gulf of St. Lawrence, into the Atlantic. The waters which course down the southern slope, fall into the valleys of the Chenango and Unadilla, and joining the Susquehanna, they reach the Atlantic through the Chesapeake bay. The Chittenango* creek is navigable for boats after receiving the waters of the Canaseraga and Cowasalon.

The Canaseraga † falls over a precipice near to Perryville, passes through the great marsh, and falls into the Chittenango, a few miles from Oneida lake. The Cowasalon is a tributary to the Canaseraga. Oneida creek rises in the town of Fenner; passes through Smithfield into Stockbridge. This stream presents a water power at the falls, worthy of more extended use and occupation of capital, than have yet been directed to it. Oneida lake forms one of the most interesting features in connexion with the olden route of travel as well as a present means of communication with other ports. It was once the great and only track or road way by water and land from the Hudson river to the Genesee Valley or to the Seneca lake. Batteaux ascended the Mohawk, or teams would follow its banks to Fort Stanwix, (Rome,) thence cross a portage to Fort Bull, on the head waters of Wood creek and following on the surface of this stream, would reach the bosom of Oneida lake. Here a choice of routes was presented, first: from the outlet of this lake to Seneca river, and along its course to the never freezing Seneca lake, whose high temperature never permits an icy barrier to the traveller's progress—or turning into the Oswego river, float into Lake Ontario, and reach, with ease, any point on its shores. On the western margin of the county is Cazenovia lake, a sheet of water known among the Indians as O-wah-ge-ha-gah, meaning the lake where yellow fish abound, or yellow perch lake; the elevation of this lake is 1,227 feet above tide water, and about 832 feet above the surface of Oneida lake. In length it does not exceed four miles, and is about four-fifths of a mile in breadth.

The elevation of Madison county presented to the Canal Commissioners, favorable features for the construction of reservoirs, wherein to collect masses of water for the supply of the Erie canal, if needed, in seasons of drought. Five of these reservoirs are wholly artificial, and four are natural ponds enlarged. The acres covered by water within the county may be estimated as follows:

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* Meaning "waters divide and run north."

† Meaning "Big Elks horn."

Erieville reservoir,......	340	acres,	Lord's pond,...	70	acres,
Eaton reservoir,.......	284	"	Madison pond,.	50	"
Madison brook reservoir,	235	"	Bradley brook,.	134	"
Woodman's pond,......	148	"	Kingsley brook,.	205	"
Hatch's pond,.........	136	"	Leland's pond,.	173	"
			Cazenovia lake,	1900	"
	1,143			2,532	
				1,143	
Total, ...				3,675	acres.

The Erie canal, which passes through this county, occupies a length of line to Utica, known generally as "the long level," it is here about 473 feet above tide water; from this line of canal the surface descends gradually to Oneida lake, the surface of which is 56 feet below the canal. The land on the south side of the canal rises until reaching the ridge line, running east and west from near the southern end of Cazenovia lake; the waters of this lake being 742 feet above the village of Chittenango. The hills along this region of the county, rise from one to two hundred feet above the Cazenovia level; and the surface may be deemed hilly, not ribbed with elevated ranges, but marked by abrupt, short hills, with narrow and deep valleys.

Climate.

"While the earth remaineth, seed time and harvest, and cold and heat, and summer and inter, and day and night, shall not cease."

All are familiar with repeated evidences of this gracious promise; and its constant repetition, its familiar recurrence may, it is eared, induce indifference, if nothing worse, to the chain of deendencies between seed time and harvest, cold and heat, day and ight. It may induce culpable neglect of an ordinance that man hall live by labor: and it may be that this indifference has long hained man to vice and degradation, because it kept him in the urbid streams of ignorance.

At this day and hour what a deficiency of information exists as to the causes producing changes in the atmosphere, which changes affect temperature and humidity; currents of wind; electric influences, magnetic influences, and the admixture of invisible gases! Yet each and every cause, and every effect, has a direct and most important bearing on the daily avocations of mankind; to none more important than to the agriculturist, for on these changes, and on their effects, are dependent the development of plants and the maturity of fruits.

The distribution of heat has within the last twenty years, claimed the attention of accurate observers, and the exertions now making, under the patronage of the general and State governments, to record meteorological observations, will in due time yield a comparative climatology, from which important benefits will flow to the farming interests: indeed so important is this subject, that an attempt is to be made to establish a uniform system of meteorological observations upon land and sea, by an international arrangement.

In the present state of our knowledge, a few well established facts serve to guide to certain practical results. It is well known that elevation above the oceans's surface, will lower the temperature, and so also every parallel of latitude, as we proceed northward from the equatorial regions, finds a lower grade of mean temperature. These general principles are modified by so many disturbing causes, that long and patient comparative observation is necessary before we can venture to proclaim a clear and correct and reliable account of local climates. Mountain chains give direction to the winds or impede their course: extensive forests have a powerful influence by shade, evaporation and radiation: lakes, swamps and marshes are no less disturbing causes, affecting the mean temperature of localities: again—another general principle is, that moisture increases with temperature, and we know that moisture is an important element in every object of creation. With this fact before us, how vast is the promise that "day and night shall not cease;" for far beyond the common

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observation of men, is the effect of the night's radiation in cooling the heated atmosphere of a summer's day. Less known but not less important are the influences of electricity, and of the storm and tempest; but until science has more firmly established facts which at present are "obscurely clear" we must apply our best judgment in the use of what is before us. That the county of Madison may aid in the contribution of observations, useful for future comparison, the annexed diagrams have been procured from the Rev. Henry Bannister, principal of the Oneida Conference Seminary.

It will be noticed that the mean daily temperature of Cazenovia is indicated for the years 1848 and 1849, and it is regretted that the observations for 1850 were rendered imperfect by interruption: a comparison with the tables given in the survey of Seneca county, would have been useful and interesting.

The year 1849 only can be compared, from which it appears that the mean temperature of Cazenovia was 42.73, while the mean temperature at Oaklands, in Seneca county, the farm and residence of Mr. Delafield, was 47.25, exhibiting a difference of 4.52; the difference in elevation is 747 feet, Cazenovia being about 1,227 feet above tide water, and Oaklands about 480 feet. These facts show a warmer mean temperature in Seneca county, equal to a fraction more than one degree, for every 200 feet of elevation. It is not intended to deduce any particular result from this comparison other than local peculiarity, and to show the effects of such peculiarities, which, in this instance, is supposed to be derived from the uncommon waters of the Seneca lake; uncommon because they never freeze, except along some shallow margin of the shore. The cause has been explained in Mr. Delafield's survey: the effect is to be seen in the above comparison.

It has been noticed and declared, by observing men, that the region of this county, extending from the dividing hill range, north to the Oneida lake, enjoys a temperature varying from three to four degrees higher than the region south of the hill range, this, doubtless, may be ascribed to difference of elevation—yet, without speculating upon points or matters not presented with assured accuracy, it will be more profitable to record practices based upon known data, or established by experiment after repeated tests and uniform results. In times not long passed, seed was planted on days indicated by some fanciful notion, or feeling allied to superstition: the results were necessarily doubtful, and not unfrequently most mischievous. As intelligence advanced, these idle fancies passed away, and have given place to certain established rules. Experiment, confirmed by practice, teaches that Indian corn will not germinate until exposed to a temperature of about 55°, and that if planted before, it will decay in the ground Here then is a rule for the government of agriculturists, in regard to seeding one of the important crops—a rule not to be disregarded with impunity. Another general rule may be adopted in regard to the cereal grains, few or none of them will germinate kindly, exposed to a mean temperature less than 45°; in vain, therefore, does the farmer hasten his spring planting, unless the atmospheric influences have produced the conditions necessary to start the seeds promptly into growth, after being committed to the soil: equally injurious is delay in sowing winter grain, as the autumnal frosts arrest the process of vegetation, depriving the plant of vigorous and extended root, sufficient for their protection and early support in the spring. The necessity for caution, on these points, is clear, from the fact that a severe frost occurred on the 16th September, 1851, and again on the 17th and 18th days of the same month. This low state of temperature effectually destroyed the vitality of Indian corn and tobacco, in the county, excepting only the lower land near the lake, and in sheltered or depressed hollows. The hills of the county were covered with snow on the 23d of October, 1851, and the bottom lands were covered on the 8th of November following.

Geology of the County.

The surveys of the several counties of the State of New-York, under the direction of the New-York State Agricultural Society, aim at *utility*, rather than scientific research; at an accumulation of facts for the consideration of the agriculturist, to the exclusion of closet theories, unless they have been subjected to, and approved by experiment and repeated trials. It seems necessary, at all times, to follow a system, even though not perfect, and adopting such portion of the classification of the State geologists, as bears any relation to Madison county; such facts are presented as may explain, familiarly, its geological features, apply them to agricultural improvement, and induce a more extended inquiry. The entire series of rocks of this region are stratified, save only the boulders or loose rocks which are abundantly strewed, by deposit, over the county. Of the series, numbering in all, seventeen or eighteen, only seven are observable here, viz: the Clinton group, Niagara group, Onondaga salt group, Helderberg group, Hamilton group, Tully limestone, Portage or Chemung group. Of these the Clinton strata is the lowest in the series, and each succeeding one in the list is superincumbent upon the preceding. The Portage or Chemung group, being the upper strata of rock, commencing at the shores of Oneida lake. The Clinton group, is discoverable on the farm of Mr. Thomas Donley, and a few other points; the drift and alluvial deposits cover this lowest strata extensively. Notwithstanding this impediment, the iron ore which extends through this bed, is visible; also fragments of the red iron rock: on the lake shore is seen the olive and green shale.

Next above the Clinton group lies the Niagara rock. It shows itself in a few localities, but for the most part forms the beds and basins of extensive marshes and swamps: it may be seen on the farms of Messrs. Wood and Adams, in Lenox, and on Joseph Clark's in Sullivan. Above the Niagara lime rocks, lies the Onondaga salt group, observable for a width of six miles. One feature of the soil occupied by this strata is, the general absence of water, except at unusual depths, attributed to the open seams prevalent in this strata, through which the waters sink, until arrested by the more compact Niagara lime stone below. This rock extends a short distance north of the canal to Clockville, and is discoverable at many points. In the town of Stockbridge, on the hill road, between Knoxville and Siloam, a cliff exposes this rock to its conjunction or contact with the Niagara group below. In this rock is found the beds characterised by deposits of sulphate of lime, or plaster. These beds are in the strata of slates, compacted marls and limestones, containing a large amount of silica: they crumble by exposure to the weather, forming gray and drab colored soft shales. The principal beds, as exposed, are in Sullivan, Lenox and Stockbridge; and those worked most extensively, are on the lands of J. Brown, lot 35, two mile strip; also, A. Kellogg, on the same lot: E. Bull, on lot 40: B. Cady, lot 34. On the land of the widow Freeman, lot No. 41, is another open quarry.

It is said these plaster beds were discovered by digging a well, and were worked as early as the year 1800; before the construction of the canals, imposing a heavy cost to the consumer, by the expense of transportation added to the first cost, delivered in masses, at two dollars per ton, at the quay. The plaster bed on the widow Freeman's farm yields about nine hundred tons per annum, which, at the bed, commands twenty-five cents per ton; or if delivered at the canal, ninety cents per ton is obtained for it. The quarries of Messrs. Brown and Bull are equally productive. There is a bed in Lenox, on the farm of Mr. T. Lawrence, and another in Stockbridge, on the land of Mr. E. Ramsey, near to Cook's corners. This quarry of Mr. Ramsey is the most easterly quarry known in the State, though as the rock extends further east, others may be discovered. The rock strata next above the Onondaga salt, is the Helderberg series of limestone, and is of a compact nature: its general course is east and west, across the county, near the south line of Sullivan and Lenox; the area of surface indicated by the characteristics of the rock, may average two miles in width, and forms the most precipitous declivity on the north side of the dividing ridge: it projects from the road excavations and the banks of water courses: it forms the bed of the Oneida creek over which the stream leaps into the softer bed of shales below. At this point this limestone series is seen to better advantage than at any other place in the country, as the waters leap from terrace to terrace, affording convenient access for the examination of each strata. It may be again seen and examined, on the banks of the Canaseraga, at Perryville where the waters fall 130 feet, and at the Chittenango falls between Cazenovia and Fenner, where the cascade is 136 feet. It seems proper to remark here that the value of this region of the county does not appear to be properly appreciated: the vast amount of excellent building stone: the lime and water lime, as well as the products of the soil, might, at a small comparative cost, be sent to market in competition with like products from any part of the State, and thereby add largely to the wealth of the county. Several lime kilns are in operation; one of which, belonging to Messrs. Carpenters, in Stockbridge, produces, annually, 10,000 bushels of lime, the value of which is 12½ cents per bushel. The same persons prepare, annually, 3,000 bushels of water lime, at a value of 15 cents per bushel, pulverized. Another kiln, belonging to Mr. Matherson, has produced, in the last year, 20,000 bushels of quick lime and 10,000 bushels of water lime. Improved kilns with improved systems of transportation would infuse a new life and vastly extended value into the locality. The dip of the rock, at this locality, is 1° 40′ south.

At the Chittenango falls the lime rock turns to the north, maintaining nearly a level with the falls: in a direction north west and about two miles distant, is a cave, or, more properly, a cleft in the rock; the descent into it is through a small opening at the surface. The depth of this fissure is supposed to be two hundred feet: the descent is so steep and attended with danger, that no very accurate account can yet be given of its extent or dimensions; deposites of carbonate of lime may be seen pendant from the rock. Near the western line of the county is the point, at one time having notoriety and exciting much interest as the first discovered bed of water lime in this State. The discovery was accidental, and brought to light by the efforts of contractors to furnish lime in large quantities for use in works connected with the Erie canal, when the first arrangements were made for its construction. The first contracts for masonry, contemplated the use of common quick lime, and led the contractors to examine the reputed limestones of the State; among which the stone of Madison county attracted notice, and without sufficient knowledge of geological characteristics, quarries were opened on the land of T. Clarke, Esq., in the town of Sullivan. A large kiln was constructed, charged and burned, and the delivery was commenced, but soon arrested, for, upon trial, all parties were surprised at the absence of the usual characteristics of quick lime: no violent effervescence: no evolvement of heat as usual, upon the application of water to caustic lime; in short, it would not "slack." This failure of the contractors to produce quick lime, and the attendant circumstances, brought the subject to the notice of the engineers, Mr. Canvas White and Judge Wright. Mr. White had visited England with the intent to procure information in regard to the great public works of that nation to which end he had enquired into the nature of the various cements and limes: upon an examination of the stone from the Madison quarry, and experiments made with it in the presence of himself and Judge Wright, it was decided to be water lime, or cement, not inferior to the famed cements of Europe. Mr. White obtained a patent for making the cement: but his rights were evaded for many years; builders, in their ignorance, permitted prejudice to warp their judgments, and though used on the canal structures, it made its way to public favor very slowly. Great exertions were made to invalidate Mr. White's patent, which was, eventually (in 1825) compromised by the legislative action of this State paying to him $10,000 for his right, and then throwing it open to the people.

The first successful production of water lime was in the year 1818–19, under the guidance of Mr. John B. Yates, yielding from four to five dollars per barrel, in a pulverized state. The water lime, prepared at Mr. Mathersons' quarries and kilns, is taken from a strata about three feet thick which when broken across, appears ribboned. North of Perryville, on the farm of Mr. F. Hand, is an extensive quarry and kiln for water lime; and another under the charge of Mr. Benjamin Cady, south of Canaseraga. In connexion with the limestone rock, near Perryville, a mass of hard blue or dark shale extends eastward, a distance of about five miles, forming a strata twenty-five feet in thickness, and interposed between the lime rock layers. This formation seems to have escaped the State geologists, probably from its limited extent. No fossils are discoverable, and the cleavage and joints are similar to those of the Loraine shales. The limestone rock is rarely exposed to view except in ravines, because the deep and extensive beds of drift materials cover this region.

The rock next in the series is the *Hamilton group*, which covers nearly the southern half of the county. It is a dark blue slate or shale of great thickness, and is generally overlaid by a mass of fossiliferous blue slate, which is easily broken, and crumbles rapidly when exposed to the weather. This strata is known as Marcellus shale. It has been stated that the face of the country along the dividing ridge of hills, is not a continuous chain, but interrupted by valleys or channels in very irregular order, some of them having very abrupt sides. It would seem that when this region was submerged, and the current setting southward, the action of the waters swept away the softer shales, making the deepest channels in that portion of the rock which by fissures or seams was most easily displaced, and thus, when the waters subsided, the hill range presented a serrated appearance. This result is manifest, as springing from the water current; for on examination, the broken edges of the rock strata on opposing sides of hills in the same line, correspond in every character, as if once a continuous mass.

The dark color of the Hamilton group, arising from the large combination of vegetable matter, together with the natural effects of its decomposition producing a bitumen, has too often induced the unwary to dream of coal beds. An abortive attempt was made on the farm of Mr. Sage, in Cazenovia, to reach a coal deposit, by sinking a shaft to the depth of one hundred feet. Several equally fruitless attempts have been made at other points in the county; but intelligence is rapidly dispersing these idle dreams, giving to industrious labor more legitimate pursuits and desirable recompense.

A lime stone deposit is found next to the Hamilton group; it is the *Tully limestone.* It forms a line nearly across the State, though rarely apparent in this county. In the towns of De Ruyter, Georgetown, Nelson, and Lebanon, it may be seen in the ravines. At the hill, east of De Ruyter village, a layer of this limestone may be traced as lying upon the Hamilton rock, exhibiting the strata on every side of the hill, and above it is distinctly traceable the Portage rock. The same features are observable in the hill lying southwest of Woodstock; and in another hill in Nelson, where the lime strata is in position, near the summit. The exposure of this rock gives the inclination or dip as twenty-nine feet in the distance of one mile. This limestone does not produce a good caustic lime, yet is advantageously used as building stone.

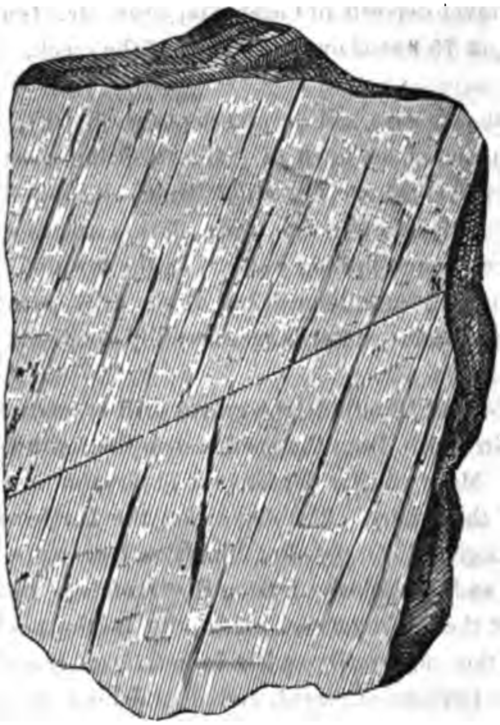
The *Portage group* of rock follows the Tully limestone; the lower member is a dark shale; esteeming the Genesee slate as belonging to this group, it forms the upper strata, producing an excellent flagging stone, and tolerable building stone. Its character can be readily examined [illegible] Burdick's quarries, south of De Ruyter village. It crops out on the hill tops in De Ruyter, Georgetown, and Nelson. This completes the rock series upon which the soil of Madison county reposes.

The great masses of drift sand and gravel which cover the Helderberg series, have been mentioned. Indeed they are so extensive that the junction of this series with the Hamilton rock, is not discoverable: yet the disruption of the lime bed must, at some period before the gravel deposit, have been extensive, for every town south of this series exhibits fragments of this rock, in pebbles or boulders: on the land, lot No. 38, in Lebanon, large blocks of lime stone are observable, some of which are equal to a ton in weight, and upon examination they exhibit the same fossils as appear in the Onondaga series, from which they are derived. So extensive is the deposit of limestone boulders in Lebanon, that kilns have been supplied with stone by collecting them from adjacent fields. The deposit of grey sand-stone and granite, show that much of the drift was brought from distances far north of this county. The depth of gravel deposits in Cazenovia, near Mr. Ten Eyck's factory, is about 75 feet above the waters of the creek.

The most extensive and deepest deposits of drift, are found in the eastern part of the town of Madison, being near the village, one hundred feet deep. The difficulty of sinking effective wells in this region, is a serious one. Mr. Barton dug to a depth of one hundred feet, before finding water. In the town of Hamilton, the deposit has not been fathomed, but as the drift partakes of more clay, forming basins, water is more readily obtained.

In the town of Hamilton, the gravel drift extends over a surface two miles in width, from the northeast to the southwest corner of the town. Many similar deposits are observable in all the southern half of the county. The deposit on the northern half of the county, is a gravel composed of limestone fragments, mixed with a red clay and sand, derived from the Onondaga salt group. In this respect there is a general uniformity in the northern towns, yet a variation necessarily exists by reason of gravity depositing the heavier portions of gravel, and diminishing in size until the beds become more sandy and clayey.

Drift marks are observable in different parts of the county, indicating the direction of the currents depositing the soils. At the quarries of Mr. Sidney Roberts, in Cazenovia, about half a mile north of the village, the marks bear south, 16 degrees east; at R. S. Ransom's, in Fenner, S. 42 degrees E; at lot 32, in Madison, S. 15 degrees W; lot in the northeast corner of Hamilton, S. 15 degrees W; on the turnpike in Brookfield, one mile west of Clarksville, S. 62 degrees 30 minutes W.



Fac simile of drift marks on Hamilton rock, near R. S. Ransom's barn, Fenner.

When the waters which covered this region began to subside, the main channels for discharge were probably the valleys through which the principal rivers now traverse; large covered, extensive surfaces forming lakes, some of which, resting in basins of great depth, remain to this day; others, wearing away the drift at their lowest deposit, allowed the waters to drain off by degrees, and until the rock formation being reached, a series of ages will be needed to lower the waters from the level known to us at this day; supposing that no convulsion occurs, to break down the present barriers.

By the subsidence of the waters, beds of sand and clay are exposed, of great thickness along the shores of the lakes; in the clay are masses of shells of the same species as now live in the waters of the lakes; so likewise in valleys and points where wells have been excavated, similar remains are found.

It cannot be reasonably doubted that then as now, the waters were thickly inhabited by these aquatic animals; they are known to exist in countless numbers on various coasts, and mariners have discovered by the use of their deep sea line, beds of broken shells extending for several miles; beds on which shells have accumulated and died for ages.

In the same way have the masses of shells been collected on the spaces in this country now forming the valuable MARL BEDS. They were probably first covered by the sand and clay floating in the subsiding waters; the breaking down of the adjacent banks formed additional layers of sedimentary matters and finally a vegetable deposit affording a resting place for seeds, trees, and ultimately rich meadows. This, it is believed is the most probable explanation of the formation of marl.* The most extensive marl beds in the county of Madison are on the farms of C. D. Miller, Esq., of Peterboro'; where at least four hundred acres are underlaid with a shell deposit of unascertained depth.

Under the marshes in Sullivan, 1,000 acres or more are covered with shell marl; in short nearly every pond or water basin in the county seems paved with marl. The imposing strata is generally muck, about four or five feet thick. The shells most abundant in these beds are figured below; they were taken from the deposits near Peterboro', in the town of Smithfield.

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*See Appendix for a different theory of marl formation.

Impressed with the importance of marl to the improved cultivation of farms, Col. Miller caused the Peterboro' marl to be analyzed; he submitted a portion to the examination of Professor Norton, agricultural chemist, of Yale College; in reply to the several inquiries, Professor Norton wrote as follows:

"You will perceive from the accompanying analysis that this earth is a marl, and I have no hesitation in pronouncing it one of excellent quality; the carbonate of lime, you will observe amounts to about eight-tenths of the whole; the very small quantity of carbonate of magnesia and the trace of phosphoric acid, adds materially to its enriching qualities, although it is present in small quantities.

"Marls are seldom richer in lime than this is, and if it abounds on your farm, you have a most valuable source of fertility, unless you are on a limestone formation and well supplied.

"The sandy matter, the iron and alumina, are of but little importance in estimating its economical value. In application to the redeemed swamp of which you speak, the marl is likely to be of especial value, as such soils do not usually abound in lime. The greatest difficulty on breaking up lands of this character, ordinarily arises from a superabundance of vegetable matter. In all swampy places this matter accumulates, because the constant pressure of stagnant water prevents a full admission of air and warmth. Under these circumstances the decomposition of vegetable substances proceeds very slowly, and various *vegetable acids* are formed, noxious to all our cultivated crops. When the water is drained away, and light and air are admitted, the arrested decomposition proceeds gradually and in time the noxious substances are destroyed, and brought into a state for the nourishment of plants. This always is hastened greatly by the application of lime, more particularly of *quick lime;* but decidedly by this form of marl also. It therefore not only supplies a want of the soil, but ameliorates its chemical condition. It would be very useful to expose the marl to a winter's frost before applying it, and then you might safely lay on 'large doses.'"

The irregular portion of the hilly surface of this county has been alluded to; no ranges of hills in the direction of *the drift* being observable. One consequence of this irregularity seems to be the formation of basins, holding the waters pouring down the sides of the hills, and in many places covering wide areas. In these basins vegetable matter has collected for unknown ages, varying at this day from one to six feet in depth. They are to be met in every town in the county, and in some portions possess the characteristics of peat.

These muck deposits or swamps, support a growth of black ash, white cedar and tamarack; they have received but little attention or examination, being deemed generally worthless, yet to a great extent they may be reclaimed by draining, may conduce to fertilize the uplands, and ultimately be converted into rich pastures and meadows. The farmers of this State seem not to be aware that those deposits are available for enriching their fields, and by proper care, becoming the means for restoring many of the elements carried off by over cropping. This remark applies with full force to the farmers of Madison county, because every man has within his easy control an unlimited amount of muck deposit.

There are a few observing men who have experienced large benefits from the use of muck, and the advantages to their respective farms are so obvious, that the means and methods for its use attract the notice of neighbors; thus by degrees extending an improvement which must add largely to the wealth of the county. Mr. James H. Dunbar, of East Hamilton, was one of the first farmers who composted muck with lime, and by attention to manuring, brought his farm to a high state of cultivation. The farm is now in possession of Mr. H. P. Potter, under whose careful management, it has obtained the first premium of the county this year. The method of composting practiced by Mr. Dunbar, was to draw the muck from the marsh during the winter months; dispose of it in rows that it might freeze and thaw until spring, then add about one load of lime to every ten loads of muck, mixing it thoroughly by shoveling it over; after resting in this state for four or six weeks, it became decomposed sufficiently for use. He applied it broadcast on spring grains, as a top-dressing to fall crops, and to corn hills.

Mr. Alpheus Morse has also used muck from his swamps. As in the previous case, he draws the muck in the winter months, and at the same time adds one bushel of caustic lime to each load, also a peck of salt. By the arrival of spring, a complete decomposition is effected, and of this compost he applies thirty loads to the acre upon his several fields, with decided advantage. He carries muck to his horse yards and cow yards, to absorb the rich liquids, that nothing be lost.

In some instances unleached ashes are added to the muck heap, in the proportion of three bushels to a load of muck, and has been found very effective. The abundant supply of marl presents to every agriculturist of this county the means for composting muck at a reasonable cost. These ingredients, mixed in equal portions, act readily upon each other, and soon produce a fertilizer applicable to almost every crop.

These remarks upon muck deposits, will indicate an extensive area of swamp land in this county—an undesirable feature—for, in the towns of Sullivan and Lenox, more than 15,000 acres are covered with swamp. Public spirit has not been wanting to drain this swamp, and large sums have been abortively expended. The error was probably in the system, for the declivity to the lake, or to the Canandaigua creek, is equal to at least sixteen feet to the mile.

Another important and useful deposit is somewhat abundant in this county; it is *tufa*, or the carbonate of lime, known sometimes by the name of *horse bone stone.* It is found in many places along the line of the Helderberg limestone, at the foot of the gravel banks above Delphi. Very extensive deposits exist about three miles from Chittenango, on the road to Cazenovia. This tufa is a calcareous deposit or precipitate from the waters charged with lime.

Several kilns have been erected for burning tufa into lime, which has obtained a character for excellence, commanding twenty cents per bushel at the kiln. Mr. Charles Keeler produces 10,300 bushels of lime per annum from one kiln.

The geological features of the county as explained in regard to the drift deposits, and the subsequent formations of shell marl and muck, will in a great measure account for the soils, upon which the farmer's labor is bestowed with the design to produce a sustenance for himself and his household and a surplus for accumulation.

It seems evident that sand and gravel, pebbles and boulders, have been swept over the face of the county, mingled and mingling by the force of the current, and deposited in masses as controlled by gravity, or directed by interposing obstacles; alumina or clay being deposited in layers or strata where the waters found more repose. In the progress of ages vegetable matter shed a covering over and mixed with the surface earth, thus giving our usual farm soils. The combination of materials forming soil, produces a chemical action, or decomposition on and among one or more of the constituents giving new results, and thus from period to period changing its character. The atmospheric changes are prominent agents in changing the character of the earth's surface.

Springs.

It has been shown that large areas of water remain stagnant in most of the towns of this county, resting, doubtless, in the rock basins, or in basins of clay or tenacious soil. It has been shown, also, that in other parts of the county, deep gravel beds exist in which no water is found at the depth of one hundred feet; and by which, as fast as the dews and showers descend, they are at once absorbed, sinking rapidly through the porous mass.

When treating of the tufa or calcareous deposits near Delphi, and also a few miles from Chittenango, it was described as found along the bottom line of the Helderberg limestone. Now it is known that rain water will dissolve, in a degree, the calcareous rocks on which it falls or flows; and the more that waters, from any cause, are combined with carbonic acid, the greater quantity of calcareous matter will be dissolved and held in solution. When, therefore, waters thus impregnated, reach the side of a hill, or any opening exposed to the air, where the acid may be dissipated, the ingredients held in solution are precipitated, forming the incrustations at the mouth of the springs and along the outlet. Such is the nature of the springs in the neighborhood above named.

The region where the gypsum or plaster beds are deposited must have exhibited in the fissures of the shale, much iron pyrites, which, when exposed to air, set loose sulphuric acid, but when pyrites decompose without access to atmospheric influence, sulphuretted hydrogen is sent forth, impregnating with its peculiar odor all waters through which it passes. This action in the neighborhood of Chittenango will account for the "Yates spring," and the "White Sulphur spring." This last spring is on the land of Mr. J. Holmes, sending forth its waters directly from the shale. Upon analysis, the *White Sulphur spring* produces in one pint of water—

Carbonate of lime,	1.33
Sulphate of lime,	8.22
Sulphate of magnesia,	3.11
Chloride of calcium,	trace.
Vegetable matter,	trace.
	12.66 grains.

The *Yates spring* produces in one pint of water—

Carbonate of lime,	0.88
Sulphate of soda,	1.66
Sulphate of lime and magnesia,	12.75
Chloride of calcium,	0.14
Organic matter,	trace.
	15.43 grains.

The waters of these springs have received strong commendations from medical men, as salubrious, and curative in many ailments. In addition to the healing powers of the springs, the proprietors have added comfort and luxury for the cheerful invalid, rest and privacy for the suffering; beauty of scenery, good roads, and pure air offer every inducement that is to be found at the most popular and frequented watering places.

Agriculture.

What answer shall be given to the inquiry whether the county of Madison exhibits any evidence of improved cultivation? The reply if not direct, is conclusive; view the district schools without a vacant seat: academies filled with attentive scholars: a university ranking high amid the literary institutions of the country. Mind thus employed, gives intelligence to examine and comprehend the operations of nature, in all departments, essential and useful to the welfare and true adornment of man. In no branch of knowledge is the wisdom and excellence of the creation so widely displayed as in the varied movements of agriculture: no science demands, probably such diversified information as the cultivation of the earth. With abundant means for accumulating and distributing knowledge, means steadfastly applied and diligently stored: with a fertile soil affording abundant means for sustenance and prospective accumulation; it may fairly be claimed for the county, that her sons are prosperous and every improvement of the age is found within her borders. But though these truths apply to many, there is, in this county, as elsewhere, a sad deficiency in too large a proportion of those who might rise above indifference. One observing farmer marks the difference of fertility and productiveness in a section of the town; he examines and traces cause to effect, and by mind, or physical power, he aids to remedy or remove any existing evil; yet how many know not and care not for the cause of unproductiveness: they fold their arms, and blindly, as well as foolishly, ascribe their want of success to chance or luck!

One man will inquire—does my labor produce the greatest possible return? Can I by study or closer examination increase the products or the profits of my farm? while too many are intent upon retaining what they possess without labor, or endeavoring to avoid labor, hope to increase their store by a lucky season. The truth is, wealth has increased by the force of the intelligence and labor of the few; but the powers of the county are unused or misused by the many, depriving it of full one half of the annual profits which ought and might be steadily added to the aggregate wealth. An honest admission of this fact is the facile way of removing the first barrier to amendment, and there need be no reproach, so far as a comparison may be drawn with adjacent counties, for none can well claim exemption from a similar deficiency. This admission, with a determination to improve by study and application of sound principles, will bring about a general level of high cultivation, with every indication of abundance and prosperity.

As a basis on which to build a fair estimate of the present condition of agriculture, a statement of facts are here given; the one being collected from the practice of a farm deemed among the best in the county, and to the proprietor of which has been awarded the first premium at the late county fair; the other is the practice of a large majority of the farmers. These farms are numbered one and two, for convenient reference; No. 1, being the premium farm, and No. 2, the farm of average condition.

No. 1.

CROPS.	Acres.	Cost.	Quantity.	Market value	Profit.	Per acre.
Meadow hay,..	24	$158 70	61 ts.	$305 00	$146 30	$6 09
Oats,........	6	64 68	372 bu.	126 60	61 92	10 32
Corn,........	3	64 09	195 "	115 20	51 11	17 04
Barley, ...	4	52 69	105 "	91 00	38 31	9 57
Wheat, ...	1	13 82	14 "	16 50	2 68	2 68
Potatoes,....	¾	31 33	117 "	68 00	36 67	48 91
	38¾	$385 31		722 30	336 99	
Hops,........	5	561 79	7,800 "	1,602 00	1,040 21	
Teasles,.....	2½	62 32	350,000	218 75	156 43	
	46¼	1,009 42	....	2,543 05	1,533 63	

No. 2.

CROPS.	Acres.	Cost.	Quantity.	Market value	Profit.	Per acre.
Meadow hay,	24	$146 00	42 ts	$210 00	$64 00	$2 66
Oats, ...	4	55 00	156 bu.	54 80	......	loss 20 cts.
Corn, ...	5	53 72	200 "	117 00	63 28	12 66
Barley, ...	....	....	....	....	......	....
Wheat, .. .	4	59 52	64 "	74 00	14 48	3 62
Potatoes, ...	2	80 00	228 "	91 20	11 20	5 60
	39	394 24	......	547 00	152 96	

No. 1 is a farm of 60 acres: No. 2 is the same size. A comparison of the *farm crops*, from very nearly the same area, shows the cost of cultivation on No. 1, $385.31, and No. 2, $394.21—making a difference in favor of No. 1, of $8.90. The market value of the products from the above areas is from No. 1, $722.30—and from No. 2, $547; showing a difference in favor of No. 1, of $175.30. The net profits obtained by No. 1, were $336.99, while the net profits from No. 2, were $152.96—thus exhibiting an advantage of $184.03 in favor of No. 1,—equal to more than twice the amount of profit of No. 2, gained to No. 1, by care, good management, and prompt adaptation of modern improvements, and from about equal areas of land.

The farm No. 1, reports the appropriation of five acres to hop vines; cost, $561.79; yield, 7,800 lbs.; value, $1,602; profit, ...	$1,040 21
Two and one-half acres to teasles; cost, $62.32; yield, 50,000; value, $218.75; profit, ...	156 43
	$1,196 64
Which, added to the profits received from $38\frac{3}{4}$ acres,..	336 99
	$1,533 63

shows a profit of $8\frac{64}{100}$ per cent. from the $38\frac{3}{4}$ acres, and a profit of $39\frac{33}{100}$ per cent., from $46\frac{1}{4}$ acres,—on the whole cost of the farm, ($3,900.) The farm No. 2, pays $6\frac{3}{100}$ per cent. from 39 acres, on the cost of the whole farm. The farms are respectively valued in the market at *sixty-five* dollars per acre, or $3,900 each.

But as no returns have been presented of products of the *whole* of either farm, it may be deemed more equitable to compare equal areas taken at the cost of each area, instead of supposing the profits confined to each entire farm. Then it gives this result: that $38\frac{3}{4}$ acres of farm No. 1, at $65 per acre, pays a profit of $8\frac{14}{100}$ per cent. on their cost. At $65 per acre, $46\frac{1}{4}$ acres of farm No. 1 pay a profit of 51 per cent.; and 39 acres of the farm No. 2, at $65 per acre, pays a profit of $6\frac{3}{100}$ per cent. on their cost.

Thus it appears that the difference on equal values of land, is $7\frac{35}{100}$ per cent. in favor of No. 1, arising from better cultivation. In each report, the cultivated crops are charged with interest, at 7 per cent., as a rent of the land at a cost of $65 per acre. The profits, as presented, may be adopted, therefore, as true nett profits per acre.

From these statements an approximation may be reached, to the present condition of farming in the county of Madison; and it may be safe to estimate the average returns on capital invested in land at or near five per cent., based on the foregoing reports. This falls short of a reasonable recompense; for the same amount of capital invested in bonds, secured by mortgage, would yield to the owner an income of seven per cent., without any cost for labor. Assuming this last named rate as a minimum value for capital, the great mass of farmers must necessarily increase the fertility of their soils and the extent of their crops, in order to procure common interest for their capital.

While upon this subject, attention should be drawn to the profits derived from the several crops per acre; and according to the results of the ordinary farming, it appears that hay yields a profit of $2.66 per acre; oats yield no profit; corn yields a profit of $12.66 per acre; barley yields a profit of $9 per acre; wheat yields a profit of $3.62 per acre; potatoes yield a profit of $5.60. It would have exhibited a more precise view of the state and condition of farming if the respective occupants of the farms Nos. 1 and 2, had presented the uses of the unreported acres, with the number of days of labor bestowed on them, with the profit or loss occurring; yet having, as above stated, the near results derived from the principal crops, they serve to prove the necessity for a better cultivation of the soil.

The general deterioration of the soil throughout the State, has been made manifest by the several census returns recorded within sixty years: yet the cause has been seen or known to but few; nor heeded by farmers until within the last twelve years. The causes were a general deficiency of knowledge of first principles connected with the elements of the earth, and of vegetation: also the natural desire of man to obtain the largest accumulation with the smallest cost. Deficient crops induced inquiry, and the vast importance of the inquiry called into action the most vigorous intellects of the age: the discovery was made that the earth or soil possessed a variety of elements, and that man has abstracted several of them, unfitting it to continue the production of the same crops; continued inquiry proved that various crops abstracted various proportions of the important elements; and it was found that the cultivator did not replace the elements of fertility in the proportions he had consumed. The enlightened men of the nation at once felt the importance of spreading these truths over the land: liberal men, largely endowed with public spirit, established the periodical called the Cultivator, on the pages of which were given in a plain and clear manner, the discoveries of agricultural errors, with such remarks as were calculated to lead farmers to observation, and experiment with improvement. To this day the Cultivator stands nobly forward to aid the farmer in his endeavors.

The evils of deficient information were so extensive in the land, that other and very valuable sources of information were established, among them was the Genesee Farmer—the American Agriculturist—and recently the Rural New-Yorker. The vast popularity and extensive circulation of these works prove the conviction of the farmer, that knowledge was and is the great and all important aid needed by him; the thirst for its acquisition has increased, and in justice to the farmers of Madison county it must be recorded, that these truths were accepted by them at an early day; and while they did and do accord to the Cultivator and other periodicals all honor and praise for their sound and noble efforts; yet as no publications could instil into every competent mind the elements and principles of agriculture, they deemed it worthy of the county and the cause, to establish seminaries, academies and a University within the county, whereby this all important knowledge might be implanted in the minds of the young, and be made to grow, ripen, blossom and bear fruit, useful to a wide region of country. Experience has already shewn the happy results of these efforts, and it has also convinced the people of Madison that a higher institution is necessary, to contend with and eradicate the evils of deficient information. They are well satisfied that a State institution is most necessary to excite the true spirit of the whole State, to give vigor and efficiency to instruction and to maintain at least an equality with other States of the Union, where agricultural instruction is highly valued and promoted.

The institutions last alluded to, are viewed by all enlightened men as the true and only proper remedies for the evils which have so long retarded the farming interests—remedies which will prove not simply passive, but most powerful in promoting the first great interest of the State and Nation (agriculture) and necessarily extending population, presenting new sources for the demand and consumption of manufactures, giving encouragement to arts and science and increasing the power of the Union.

The deterioration of the soil in its fertility; the causes of deficient crops; the action of public sentiment; and the remedies for the evils, so long endured in this region, having been stated; it is desirable to show the estimated value of farming lands and the quantities held by cultivators and others; with this intent a table is formed distinguishing village or mechanics' lots of less than eleven acres, and farms increasing in the ratio of fifty acres.

These statistics obtained from the supervisors' lists admit also the addition of the taxable value of the county, the number of acres, and the value of the land per acre, as follows:

TABLE,

Showing number of acres of land and value of real and personal property in Madison county.

TOWNS.	Village. Less than 11 acres. Mechanic lots.	Farms. Less than 25 acres.	More than 25 and less than 51 acres.	More than 50 and less than 101 acres.	More than 100 and less than 201 acres.	More than 200 and less than 300 acres.	More than 300 acres.	Value of real estate.	Value of personal property.	No. of acres.	Value per acre.
Brookfield,	151	39	58	165	134	30	6	$783,566	$102,230	47,146	$16 62
Cazenovia,	427	63	82	150	76	9	3	1,277,173	552,900	29,681	43 03
De Ruyter,	98	21	55	63	43	14	4	383,395	49,660	19,601	19 56
Eaton,	290	38	49	103	75	11	2	840,859	185,375	26,057	32 27
Fenner,	49	30	47	101	43	5	1	506,592	15,000	18,177	27 87
Georgetown,	43	28	99	91	62	3	2	237,765	22,750	23,174	10 26
Hamilton,	305	42	77	117	77	3	1	748,867	297,295	24,184	30 80
Lebanon,	57	15	33	73	78	18	6	589,462	87,830	26,210	22 49
Lenox,	600	74	133	220	122	19	5	2,064,835	258,350	50,276	41 07
Madison,	106	30	45	118	54	3	4	702,943	136,300	23,565	29 83
Nelson,	72	38	49	103	75	11	2	518,868	102,400	26,527	19 56
Smithfield,	183	28	34	79	39	2	0	398,617	41,825	14,824	26 89
Stockbridge,	105	23	55	116	36	6	1	595,025	19,790	19,319	30 80
Sullivan,	292	72	129	123	144	21	6	1,614,118	147,950	43,447	37 16
	2788	566	990	1663	936	155	44	$11,258,085	$2,019,655	392,178	

Principal Crops.

The geological department of this survey has explained the great variety of soil possessed by this county: a variety arising from the seven great stratified formations: from the drift and deposits of vegetable matter; they vary from the coarsest gravel to fine sand, from tenacious clay to a clay loam, with extensive alluvial formations. The prevailing surface is however gravelly or sandy loam. With this texture of soil, it may be expected that the chief cereal crops are barley, oats and Indian corn.

Barley is the most profitable small grain crop in this region, as it yields a profit of nine dollars per acre under ordinary tillage. The cultivation of this grain is increasing from various causes: the commercial demand has been great for several years; it is found to be a most nutritious food for animals, and it is admirably adapted to the soil. The quantity produced in the year 1845, was 229,606 bushels, and in 1850, 262,914 bushels. Heretofore the usual varieties were the Chevalier or two rowed, and the Bear or four rowed barley. A few years ago three heads of barley were discovered by Mr. David Hess of Fenner, apparently very different from the main crop which he had sowed; these heads were noticed during the progress of the crop to maturity, and carefully preserved at the season of harvest, (1844.) The three heads grew from one root, the seed from which produced a half pint of grains in 1845, and from these were multiplied to ninety-six bushels in 1848. They are of the two rowed variety and may be the Chevalier barley as raised at Cheltenham in England, where it is cultivated and weighs 55 pounds to the bushel. The barley of this region now known as the Hess barley weighs about 50 pounds per bushel. It is estimated that ten thousand bushels of this variety are produced this year, (1851.) The quantity yielded per acre has been from 35 to 40 bushels, and the greatest or premium crops have been 54, 56, 66 and 67 bushels per acre.

Indian Corn is a profitable crop, under proper cultivation. The varieties cultivated are known under the common appellation of "large eight," "large twelve," rowed yellow corn; also the "red blaze." The quantity produced in 1840, was 230,781 bushels; and per census of 1850, the quantity was 402,816 bushels. The practice of culture here most esteemed, is to plant on the inverted sward, turned over during the previous autumn, and prepared for planting in May, as soon as the temperature of the air and soil will permit germination. This practice is supposed to destroy the larvæ of insects during the winter, and it saves much valuable time in the spring. No reliable data has been obtained upon which to establish the quantity of corn produced per acre: it may be stated, for the credit of the careful Madison farmer, that the premium crops of corn have varied from 92 to 147 bushels of corn per acre: the largest crop having been raised in the town of De Ruyter. No better proof of the adaptation of this crop to the soils, and of the profits of cultivation can be presented, than the fact that Judge Enos, of De Ruyter, planted and cultivated a field of Indian corn, which cost $24.19 per acre, and yielded, to his judicious management, a net profit of $25.79 per acre.

With occasional exceptions, wheat is not to be profitably cultivated on the soils of Madison. Only 190,364 bushels were produced, according to the census of 1845, and by the census of 1850, the whole quantity is 117,594 bushels. The towns of Stockbridge, Lenox and Sullivan continued their efforts for the cultivation of this grain longer than other portions of the county; the ravages of insects, unalleviated by any remedy, damped their spirit, and prostrated the wheat crop. In proof of what an indomitable energy can accomplish, a few premium crops have been harvested, varying from 27 to 32, 35, 43, 48, and 53 bushels per acre.

Adverting to the geological features of the county, it may be useful to call the attention of farmers to the *wet condition* of their soils. Every inquiry, properly directed, and their own good intelligence will tell them that, of all the grains for food, none suffers more from a *wet* soil than *wheat*. Remove the stagnant marshes and swamps, open them by efficient drains, and drain the clay lands where water hangs; and a new era will be opened to the wheat farmer, greater and better, probably, than any before known in the county. All the prominent evils complained of are attributable mainly to excess of moisture. It seems, therefore, strongly indicated by recent examinations, that efforts be made to remove this prominent evil.

The Oat is much esteemed by the farmers of Madison. It appears by the census of 1845, that the quantity reported was 517,789 bushels, and by the recent census of 1850, the product is 553,435 bushels, thus showing a greater bulk and average of oats than of any other grain. The average yield per acre is estimated at forty bushels. The term *estimate* is here used because no certain data has been obtained by the United States officers to determine the ratable product per acre of *any* grain; an oversight or negligence much to be regretted.

The crops which have obtained the county premiums, varied from 61, 86, 98 to 106 bushels per acre. Yet no calculation of average product can fairly be made from premium crops. The varieties cultivated are the "white barley," "common black," and the "black cluster." This last variety is gaining in estimation, as ripening more uniformly, producing a rich fodder from the straw, and being very prolific.

A valuable though fluctuating crop is *the Hop*. Its introduction was at an early day, and became the source of profit to many. The quantity produced in 1850, was 639,915 pounds, and the average value may be estimated at twenty cents per pound. The value ranges from eight to thirty cents per pound, as the season may be more or less productive.

Teasles have been cultivated successfully and profitably in this county: by no one probably to greater advantage than by Mr. Hosea B. Clarke of Clarkville, in the town of Brookfield. This crop requires much manure and labor, therefore attended with much cost. The harvesting is also laborious, as the plants bloom irregularly and the teasles mature at different times on the same stalk; it is necessary to traverse the field sometimes three or even four times to secure the crop. The crop yields about 100,000 teasles per acre, yet it is often injured by the freezing and thawing of winter, a frequent disheartening casualty. The value also is very unsteady. In 1835, teasles of inferior growth were sold in Boston at $3 per thousand, and good American teasles at $5, while German and French teasles commanded $8 per thousand; during the succeeding ten years the average price was $\$1\frac{50}{100}$. At this day the best teasles are not worth more than 75 cts. per thousand. Here is an instance of fluctuation and ultimate decline in value, presenting an instructive lesson to the cultivator. The efforts to introduce manufactures led to the cultivation of a weed previously useless and troublesome; fine clothes could not be finished without them: the importation price was so high as to excite an inordinate home supply, which in time threw upon the market a greater quantity than could be consumed, consequently the value fell from $8, to 75 cts. per thousand. The cultivation of teasles in the county of Madison is now limited to Brookfield and Hamilton.

Rye has ceased to be a remunerating crop; it was formerly cultivated extensively, but has yielded to the more profitable production of barley.

Buckwheat gives an average yield of twenty bushels per acre; an instance has been known where an acre produced sixty bushels of seed. It is an uncertain crop, frequently suffering from heat or from early frosts.

Flax has almost disappeared from the farms of Madison.

Beans are deemed to be a remunerating crop; a crop equal to 200 bushels from four acres, was raised by Mr. Sholes of Hamilton; the beans were planted in rows two and a half feet asunder, and each hill twelve inches apart. The small white bean is the variety preferred at present, and are readily saleable at $1 per bushel. These facts seem to call for more attention to this article of food.

Peas as a farm crop yields an average of twenty bushels per acre, and when well secured are profitable. The uncertainty of the crop from casualties causes its neglect.

Potatoes.—This important article of food has suffered in Madison as in other parts of the world. The crop in 1845, was reported at 393,989 bushels, and in 1850, at 270,989 bushels. The cause of deficiency and the proper remedy are alike unknown. In years past an average crop of potatoes was 250 bushels. At this day few crops exceed one hundred bushels per acre.

Carrots and Beets are not extensively cultivated. Mr. Cameron, near Peterboro', has successfully cultivated the carrot. These roots are receiving more attention as food for cattle.

Grass lands and Grasses.

When the profits of cultivating grain ceased to afford sustenance to the proprietors of this region, their attention and care were transferred to the business of feeding and fattening of cattle, and raising flocks of sheep; yet strange to say, meadows and pastures have rarely obtained a devoted attention as a special or important department of the farm. It may not be too strong to say that no lands in the county have been so much neglected as the fields called pasture lots, and meadows. Few farmers appear to appreciate the necessity for cultivating grass with as much care as grain, or that the appetite and health of animals need the most nutritive grasses, as much as man needs the most nutritive grains. The consequence seems to be, far and wide, fields devoted to cattle covered with poor grasses, many noxious weeds, much moss, and varieties of aquatic grasses.

The products of grass can scarcely be estimated at one and a half tons per acre, while with more attention and proper cultivation, with previous draining, nearly every farm would boast of the sweetest and most nutritious hay, luxuriant herbage for dairy cattle, and when submitted to the scythe, yielding from two to three tons of hay per acre. Among those who endeavor to secure pasture and meadows, the following grasses are cultivated: Timothy, medium-sized red clover, red top, and white clover. The practice of some is, to sow equal parts of timothy and clover on meadows, adding a larger proportion of clover for pastures. The seed is generally applied in the spring, at the time of sowing the spring grains; at the second harrowing, the first rains cover the seeds.

In connexion with the meadows of the county, allusion must be made to the unsettled practice of cultivators in their systems of hay-making. Stacks of rusty color have been seen, from which locks of hay have been drawn for examination; every spear was wiry and brittle, the heads of timothy dry and without a seed, and but here and there a blade of the plants; this condition proved clearly that the grass was not mowed until it was far too ripe; the straw had parted with its juices to feed and mature the seed, and the seed had fallen to the ground, leaving but little more than woody fiber wherewith to fodder animals. Upon a closer scrutiny, no red top was found, nor any of the many cultivated grasses of Europe, which there, are carefully added to meadows and pastures, to give a thick bottom and full proportion of grass blades, for tempting the dairy herd, as well as to give substance and value to the hay-mow.

Due attention to the exactly proper period for cutting grass, seems to be needed as much as the selection of varieties and their careful cultivation. There are some farmers who cut their timothy grass before the blossom has entirely passed off, and hay made from such grass, is found generally when taken from the mow to exhibit a pleasant green color and sweet odor. So also with clover when they have cut it while yet in full bloom, has come out in the winter from the mow, sweet and green, most grateful to all stock, and far more nutritious than overripe, woody straws and stems.

Rotation.

The eagerness for acquisition with the absence of information as to the principles of agriculture, have too recently lost their hold on the farmers of New-York, to have permitted the adoption of any general system of rotation; this assertion may be deemed too sweeping by the farmers of particular districts where accidental occurrences may have perfected a system within a comparatively narrow limit; but it seems to hold good in relation to the State at large, and only proves that the agricultural malpractices of 1750 to 1800, remain as one of the blights upon our land, not yet sufficiently checked or removed.

The facts which have been recorded in the preceding pages seem to point with unerring truth to some wrong arrangement of crops in times past, and it is happily and equally true that inquiry is leading the farmers of Madison county to investigation and ultimate light. The inquiry has already in a measure convinced them that a continuance of certain kinds of crops deteriorates and exhausts their soils; that others arrest the growth of weeds, cleansing the soil, and yet others, return to the soil by combined action more than is exhausted by their growth.

It is therefore the due arrangement of crops, by which the soil shall not be deteriorated, that requires at this time careful study and cautious application. But it is not enough, that deterioration shall be simply arrested, it must be carried farther; the arrangement may be so modified as to cause a positive accession of fertility; a clear and decided profit from the system. Though it does not belong to a county survey to point out proper systems, or to give instruction to the proprietors of the soil, it may be allowed to refer the agriculturist to the fourth volume of the State Agricultural Society's Transactions, at pages 105 and 118, for practical observations on the system; also to the seventh volume, at page 395, for other useful remarks.

Manures.

Probably three fourths of the farmers of this county, would reply incorrectly to the question—what is manure? Most men confine their view or belief in regard to it, as being only animal excrements. Such however is not the fact, and the want of a true meaning for the word has led to error, and to the delay of needed and important improvements.

A manure may be defined as, any simple or compound ingredient added and giving fertility to a soil, in which it did not before exist in sufficient quantity; every one therefore of the natural *elements* of which farm soil is composed, is a manure when applied to any portion of the earth from which it had from any cause been removed or rendered deficient; it is a manure because, in its absence certain vegetable substances cannot mature, yet by its addition it acts as a fertilizer, giving vigorous action to plants. This definition shows at once the importance and magnitude of this department of the farm.

The farmer is constantly busy extracting a variety of elements from the soil, in new forms of vegetable growth; his duty is to be as constant in returning the same elements even in greater profusion. Few agriculturists in the county have directed their attention to the increase and preservation of all fertilizing matters to be found on their respective farms; rarely extending their operations beyond the barn and stable yards. No authenticated experiments appear to have been made in relation to the careful preparation of manures, nor of compost heaps.

Ashes have been favorably used as top dressings, and farmers are more careful, than formerly, to preserve them for use on the farm.

Plaster or Gypsum is used, by many, with signal benefit, but there are many who decline its use because, as they believe, it impoverishes their soil, under the impression that as gypsum or plaster excites plants to a greater growth, that excess, whatever it may be, is so much more taken from the soil to its detriment. The great abundance of this valuable material, within the bounds of the connty, renders it a very cheap and readily obtained fertilizer for such crops as are benefited by its use: it is much to be regretted that any prejudices should interfere with a wide distribution of it. The advantages of lime are better understood, and it is often used in combination with the muck from swamps. Instances have occurred where the incautious farmer has added lime to his manure heaps, thereby inflicting a serious injury: and other instances are known where lime has been spread or applied in excess.

Cattle.

The native cattle of Madison county are derived from cows driven in from Whitestown and New Hartford, during the first efforts to people this region; the resident Indians had cows obtained from the Dutch, residents along the shores of the Mohawk. When General Cleveland reached this region, he brought with him three cows, purchased at Fort Plain, at $10 per head. They were small, light animals, red and white, and black and white in color, reported to be "good milkers," and they probably were so, by the standard of that day. The same breed is to be found even now on the pastures and roads.

The earliest attempt to improve the breed was by Mr. Lincklaen, about the year 1805, when he obtained through the influence of the Holland Land Company, eight head; they were larger than the cattle of this county, colored black and white, fine limbed, with slender necks. Unfortunately for the country, this importation was lost. The cause has not been recorded; but such an event at this day would indeed be extraordinary. The next effort was made by Messrs. Whitman and Douglass, who introduced a Devon bull into the town of Sullivan. This was about 1825, and his progeny are to be seen in all the northern towns, and many in the south.

In 1830, a Holderness bull was owned in Oneida county, on the borders of Madison, by whose services a further improvement was obtained; the vicinity of Hamilton received the largest benefit. In 1843 a bull calf was raised by Mr. S. A. Gilbert, of East Hamilton. It was generally known as the *Ackley bull.* He is now living, being the property of Mr. Daniel D. Palmer, of Brookfield. This animal is a cross of the Holderness and a native cow. There is in this instance, as in many others, an unpardonable obscurity as to his pedigree, as it is asserted by some that he was sired by a "three-quarter" Short-horn bull, belonging to Mr. B. Parlin, of Little Falls, and that his dam is yet living, owned by Mr. Gilbert, got out of a native cow by a sire possessing one-half Holderness, and one-half Short-horn blood. The weight of this bull is about

1,900 lbs., and his progeny are to be found in every town. A yoke of steers derived from the Ackley bull, were exhibited at the county fair, (1851,) by Mr. H. P. Potter, of East Hamilton, which weighed 3,360 lbs.

Mr. Wm. Ward, of Wampsville, contributed much to improve the stock in 1842, by introducing a small herd of cattle possessing Durham blood. About seven years ago a herd of very fine cattle were sent from Herkimer, to winter in Cortland county; several were reputed to be thorough bred Short-horns; when the season for their return arrived, about thirty head were purchased and retained in the towns of De Ruyter, Nelson and Eaton; these cows proved good milkers and have exerted a beneficial influence.

Mr. Beaumont, of Eaton, with a laudable spirit procured a thorough bred Durham bull and a few fine heifers from the herd of F. Rotch, of Butternuts, in Otsego county; from this source has been obtained many valuable animals.

Mr. Sylvester Burchard, of Madison, introduced a fine bull from Ohio, in 1847. While in service this animal did greatly improve the stock of his neighborhood. A very fine Devon bull calf was purchased at the State fair in 1845, by Mr. David Osgood, of Hamilton; this calf was descended direct from the stock imported by Mr. Geo. Patterson, of Baltimore; he is now six years old, and a beautiful specimen of Devon blood.

For a series of years, the efforts to improve the stock of the county, were well intended and carried on with zeal; but no well arranged system existed for perpetuating a valuable race, beyond the accidental opportunities presented from time to time. Other pursuits in life prevented the proprietors of well bred stock from entering upon the art and science of breeding; consequently we have every variety of cross, entailing excellencies as a general characteristic; but the pure blood and the thorough bred animal, has not hitherto been preserved with the care and skill necessary to future preservation.

Recently a strong rivalry has sprung up here and elsewhere between the zealous advocates for Short-horns, Devons, Herefords and Ayrshires; each claiming a supposed superiority in their respective herds; this rivalry will secure *perfection* so far as human care and ingenuity can produce it; this rivalry was strongly and advantageously exhibited at the last State fair in Rochester, (Sept. 1851,) where the glow of satisfaction marked the countenance and brightened the eye of many a breeder as he expatiated to the admiring multitude around him, on the beauties and fine points of his herd.

Several gentlemen in the county of Madison are now aware of the importance of careful breeding; and attention may be called to their herds, as gratifying to the public and profitable to the breeder. Mention has been made of Mr. Osgood's herd, and as this gentleman is one of the few who are giving an almost undivided attention to the subject, it seems useful to add that at this time he has in his herd three young bulls tracing their pedigree to the importations of Mr. Patterson, of Baltimore. He has also the "Old Caroline" cow, brought from England by Mr. Coulin. The cow is 22 years old and presented to Mr. Osgood a fine heifer calf about a year ago. His bull Cherry Baltimore is admired.

Mr. Muir breeds some excellent stock from his fine bull "Nero." Being well versed in the qualities of cattle, Mr. Muir enters into breeding with spirit, and readily obtains $50 to $100 per head for his young stock.

Mr. Sandford P. Chapman, of Mount Pleasant, near Clockville, town of Lenox, possesses the best herd, perhaps, of Short Horns in this region. There is a symmetry and beauty in his herd, and system in his management, which calls for such facts as have been collected. About four years ago Mr. Chapman procured from Mr. George Vail, of Troy, a portion of his celebrated Short-horn stock. The result of Mr. Chapman's exertions, may be well understood from the fact that in January, 1851, he owned nineteen head of thorough bred cattle, all from the Vail stock. The sales from Mr. Chapman's stock, since January, are thus detailed:

1. Fashion, a two year old heifer, to R. D. Palmer, Clockville, for $150. 2: Favorite, a bull calf, and 3. Lily, a yearling heifer, to E. G. Adams, Boston, $275. 4. Fanny, a heifer calf, and 5. Pansy, a cow, N. J. Becar, New-York, $75. 6. Mount Hope, yearling bull calf, Geo. Vail, Troy, $150. 7. Leopard, bull calf, to W. A Randall, Cassville, $100. 8. Grand Duke, bull calf, M. D. Bailey, Clockville, $150.

Mr. Chapman purchased at the late State Fair, the famed bull "Halton," bred by Mr. Vail, for which he paid $450. This bull is from Mr. Vail's Meteor. With a herd so costly, it may well be imagined that due care is bestowed upon every animal, and as Mr. Chapman's system is esteemed, and generally practiced by other breeders, it is here briefly given as the present system of the county.

All the cattle have "good care" *every day* in the year. They are housed in the autumn as soon as the atmosphere becomes cold, and are fed on hay, corn stalks, pumpkins, &c., &c. When the winter is fairly set in, the grown cattle have a feed of hay in the morning, and a portion of carrots to each, as long as the roots last; they are then let out to water and exercise, during which time the stalls are cleaned and fresh littered. This duty requires about an hour. They are then housed again, and supplied with oat or barley straw, being also well *brushed and curried.* At two o'clock P. M., the mangers are cleared out, which affords litter, and a fresh supply of straw is fed to each. At night they are again watered, the stalls are cleaned, and have a feed of hay and straw mixed. Toward spring they are supplied with as much hay as they will eat, and carrots are given more freely. The hours for feeding are regularly the same, and it is very noticeable that when the food is consumed, they will lie down on the clean litter, not caring to rise until the approach of their next feeding hour. Salt is always kept within their reach. An addition of four quarts of oat meal is daily given to such cows as are expected to calve within the period of two weeks. The calves are at all times carefully attended to. They are kept warm, well littered, and well fed.

They have two quarts of oat meal per day, a few carrots, and as much hay as they can consume. Such is also the general outline of Mr. Osgood's system, and of most careful farmers.

Mr. Alpheus Morse, of Eaton, has a herd of about twenty Shorthorn cows, and grades with a view to the dairy. His bull "Buena Vista," is out of Mr. Vail's "Meteor," by an imported cow. His calves are reared on the skimmed milk, to which is added a portion of bran or meal. Twenty yearlings and sixteen calves are on the farm sired by Buena Vista. The value of his two year old animals ranges over $40 per head to drovers.

Mr. William K. Porter, of East Hamilton, has a full blood bull and cow, from Mr. Vail's stock. *Mr. George B. Rowe*, of Canastota, has also been active in the introduction of good stock.

Several farmers have been very successful in fattening cattle; among them is Mr. Horatio Pope, of Hamilton, who has a yearling bull, whose live weight, at 12 months, was 970 pounds, and at 18 months it was 1,336 pounds. This animal was allowed to suck the dam for 18 months, and was fed with hay, meal and carrots in the winter. The cost of rearing this calf is about $40. A six year old ox has been fed by Mr. J. D. Ledyard, jr., of Cazenovia; his live weight is 2,800 pounds; many other examples might be adduced, but are not necessary. There are now about 21,500 cows in the county, 2,750 oxen, and 17,300 head of other cattle.

The Dairy.

The generally better adaptation of the soil to grazing than to the cultivation of grain, has evidently induced many farmers to turn their attention to the dairy. It seems quite evident that pasturage and meadow lands have increased greatly within a few years, especially in the northern towns of the county. There is an amount of knowledge and skill in the management of a cheese dairy not very readily attainable, hence it may be that the very inferior cheese produced is caused by unskillfulness and error which a few more years of observation and application will remove. And this inferiority must be admitted by those who have a knowledge of cheese or the prices which are obtained for the article sent from this county.

It seems that very few are found here to work their dairies upon any digested system; all is the result of imitation without any knowledge of principle; a good cheese *may* now and then be produced under such mismanagement, but more indifferent or positively bad cheese must and will follow. Like all new undertakings, failure will dampen the ardor of the zealous; yet every failure is a step to improvement, until at length patience is rewarded by perfection. Just so with the dairies of Madison, improvement was and is ardently desired, the desire produced study, and study has its reward by better cheese and a greater quantity.

The butter dairies of the county are not large, nor is the making of butter extended far beyond the consumption of the county. Excellent butter is found at most farm houses, yet the attention given this necessary of life is far too limited for a county of the area and character of Madison.

The amount of cheese	per census of	1845,	was	2,022,855	pounds.
" "	"	1850,	"	2,309,076	"
The amount of butter,	"	1845,	"	1,531,205	"
" "	"	1850,	"	1,621,888	"

Sheep.

The introduction of sheep into the county with a view to profit, may be ascribed to Mr. Curtis Hoppin, about the year 1810. Before that date the woods afforded protection to wolves and foxes too numerous to warrant any extensive sheep walks or ranges among the hills. When Mr. Hoppin arrived in the town of Lebanon, he brought with him two hundred sheep of mixed breeds; among them were coarse wooled and fine wooled fleeces, and a few South-down bucks and ewes. From this flock selections were made by farmers as fancy dictated, and wool bearing a good price, many were encouraged to venture upon breeding sheep.

In 1823, Mr. Hoppin visited Berkshire county in Massachusetts, and selected for his own use four full blooded Merino bucks, this was an improvement; but during the following year he visited Boston with a view to purchase a few Saxony sheep then imported; by this time speculative folly had raised prices to one thousand dollars a head for saxony sheep! Prices and views utterly at variance with a farmer's views. Returning through Hinsdale in Mass., he procured from the Hinsdale flocks five full blooded Merinos, and at Pittsfield, he selected twelve additional sheep of the same breed; with these he returned, and in due season gave a character and value to the growing flocks.

In 1826, Mr. Utter, of Unadilla, purchased four fine Saxony bucks in New-York, three of which were sent to Oneida county, and one was possessed by Mr. Amos Scott of Brookfield; the effect derived from this introduction was, to raise the value of Saxony fleeces derived from this buck, from five to eight cents advance per pound. The increase of flocks was arrested about this period by the appearance of the foot rot, which spread alarmingly.

Judge Enos with Mr. Merchant and Mr. Gage, of DeRuyter, soon gave a new impetus to the increase of sheep; they were followed by Mr. George T. Taylor and Mr. Leonard Howes, of Madison; Mr. Gilbert and other spirited men of East Hamilton. Judicious exertions have never ceased to improve the carcass and the fleece, though numbers have abandoned the pursuit in consequence of the fluctuating values of both sheep and wool. The injurious vibrations of the market values are apparent: thus,

In 1825,	prices	ranged for	wool, from 48 to 50	cents per lb.
1826,	"	"	25 to 38	"
1827 to '30,	"	"	25 to 35	"
1831,	"	"	55 to 75	"
1832 to '36,	"	"	33 to 35	"

and thus the prices have varied to this time.

The present condition of the flocks of the Madison farms may be appreciated by the results derived by Mr. Asa Gage, of De Ruyter, from his judicious management. His flock consisted of three hundred and nine sheep, the clip of wool was taken at the usual period, and weighed sixteen hundred and four pounds; the fleeces therefore averaged five pounds and three ounces each. In this flock were two half blood French Merinos as they are called, the fleeces from which weighed rather more than fourteen pounds each.

In connexion with this statement, the following system of management by Mr. Gage, will exemplify the methods most generally pursued by the flock masters of Madison county.

Mr. Gage constructed warm sheds for the winter care of his flocks, and so arranged as to give full ventilation; the sheep are confined to these sheds only during the night, or in tempestuous weather. During the winter the flocks are foddered with as much good hay as they will consume without waste. Frequently a sheaf of oats is allowed to each sheep per day; and in the spring, oats are sowed upon such meadows as have been unbroken for five or six years, with a view to fodder for sheep. Lambs are fed upon roots, meal, or shorts, with hay. The flocks receive their hay in cribs or racks, with upright turned bars about five inches apart. This space is found to be sufficient for the easy entrance of their heads, and they can consume all the fodder without impairing the neck wool by chaff, straw and seeds. Mr. Gage is careful to remove from his flock any invalid or imperfect animal, that he may secure a general healthy and sound constitution for his sheep, as well as uniformity of fleece. The number of sheep in the county, at this time, of all kinds, is about 83,500.

Swine.

No attention is given to swine beyond the family consumption of a part of the population, probably not beyond the convenience of a living receptacle for the garbage of a dwelling. A few good hogs are to be seen in the pens of some careful and enterprising men; they are but the usual "grass breed." Recently, a Suffolk boar and two sows have been introduced by Mr. S. A. Gilbert, of East Hamilton, and hopes are entertained that this department may prove more profitable than heretofore. The swine of the county are estimated in number at 14,600.

Horses.

Among the enterprising men of Madison county, are Colonel Charles D. Miller, of Peterboro, the Messrs. Ackleys and Gilbert, who have with commendable zeal exerted themselves to improve the breeds of horses. The following remarks from Colonel Miller, seem to cover all that can be said on this department.

"To trace the history of horses in Madison county back to its early settlement, if it were possible, would result in little profit, as it would be found in this, as in other cases, each settler brought what he was able, and not the best animal that could be selected in the country from whence he came. We find the young New-Englander, the Mohawk Dutchman, the Jerseyman, and the old countrymen bringing the best horses they could obtain, to their new homes in Madison. It was soon evident that none but good horses could endure burdens of wheat, and the long journeys to Albany, which every thrifty farmer was obliged to make with his own team. The need, of course, caused a demand for better horses. About the year 1827, John B. Yates, Esq., of Chittenango, (whose services in various ways were of the greatest importance to the county,) introduced many excellent horses; among them, were Ethiop and Hamiltonian. Messrs. Henry and George Ehle, of Sullivan, soon after procured from the eastern part of the State, a horse called "Messenger," whose stock is more generally known than any other ever imported, both into this and Onondaga county.

"The Messenger owned by P. & G. Warren, of Manlius, was sired by the Ehle Messenger, and was one of the prize animals at the first State Fair, held at Syracuse. Warren's Messenger died a few years since, at an advanced age. Ely's Eclipse, though owned in Onondaga, has no doubt greatly improved the horses of Madison. Benefit has been derived, also, from many stallions of the Duroc breed. We have many horses of the Consol stock, which suit the fancy of those who like the dun color, and black list on the back. The Godolphin, with his coat of gold cloth, and locks of silvery white, has left many good gentle horses. Some specimens of the English dray horse have made their appearance at our county fairs. Many persons requiring large, strongly made horses, find in the Alfred of Mr. Van Hoosen a valuable addition to our former stock.

The favorite fancy horses of Madison county, are of the Kentucky Hunter breed. They are descendants of the horse of that name, owned many years ago by William Ferguson, of Oriskany Falls. They possess extraordinary beauty in form, and surprising activity with great docility. The celebrated Oneida chief was sired by the Kentucky hunter. A few years since, the Messrs. Ackley, of Hamilton, brought from Vermont a very fine specimen of the Morgan horse. His colts are very promising, but none as yet have reached maturity."

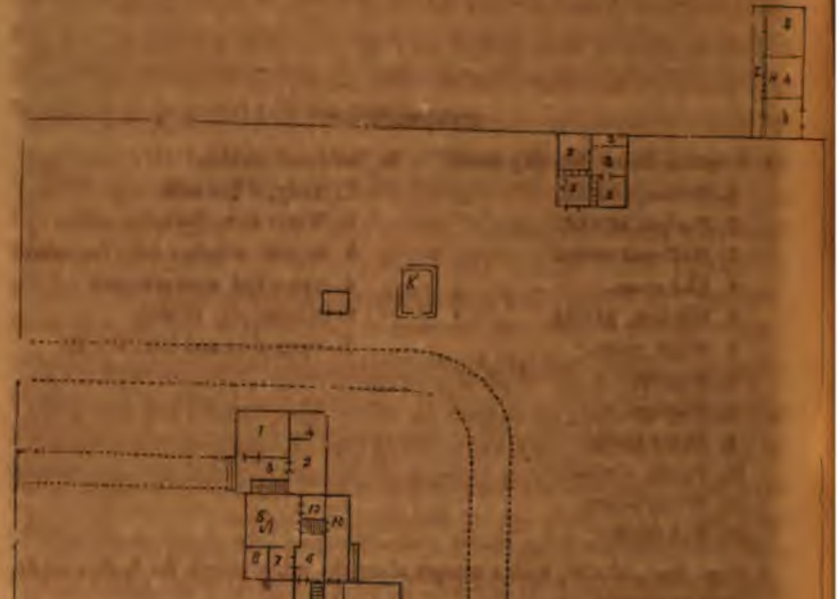
Col. Miller has a two year old and a three year old colt which give promise of great excellence. They were sired by "Consternation," an imported stud owned by J. B. Burnett, Esq., of Syracuse. The horses of this county number about 9,600.

Farm Buildings.

The shelter, comfort and arrangement of cattle, the preservation of crops, their easy carriage and housing, have received but little attention as compared with the importance of the objects in regard to economy and profit. In a country newly settled, the construction of farm buildings is confined to roughly made sheds and slab hovels; but in a country of turnpikes, canals, and railroads, every advantage in favor of the farmers' stock, products, and implements is expected.

The arrangement and construction of the dwelling house are so much connected with taste, that no expression of opinion will be hazarded in this place, nor any remark, further than the taste displayed in the dwellings and appendages thereto, strongly indicate the extent of refinement to which the proprietors have advanced.

In regard to farm buildings, their arrangement and condition indicate most generally, the system of husbandry, the economy and welfare of the farmer. The county of Madison has several farms upon which the buildings appear to be well arranged, and sufficient for the objects above stated. Among them may be particularized the farms of R. S. Ransom, of Fenner; Lewis Raynor, of Cazenovia; Aza Gage, of De Ruyter; H. P. Potter, of East Hamilton; Ellis and Alpheus Morse, of Eaton, and others. As no rule can exist applicable to all farms, no uniformity can be maintained, in any region of country; yet with modifications to situation and like governing circumstances, there must be a similarity because the necessities of farmers in these matters are very similar. With a view to exhibit the advances made in this county, the arrangements of Mr. Alpheus Morse are selected for description as being among the best which have been examined. An outline, or diagram, is given of all the erections together with such references as seem needful for their comprehension, and not without a hope that it may lead many farmers to glean suggestions or improvements for their own benefit and for the general advancement of their favored county.



PLAN OF ALPHEUS MORSE'S FARM BUILDINGS.

MA
OF
MICH

REFERENCES.

A. Dwelling house, fronting north.
  1. Parlor, 16×16.
  2. Parlor, 14×16.
  3. Hall and stairs.
  4. Bed room.
  5. Kitchen, 16×16.
  6. Wash room.
  7. Pantry.
  8. Passage.
  9. Dairy room.
  10. Porch, 6×24.
  11. Wood house.
  12. Bed room.

B. Barn and stables.
  1. Alley, 6 feet wide.
  2. Water tight floor, for cattle.
  3. Gutter, 4 inches deep, for urine
  5. Three feet wide manger.
  6. Manure pit, 12×36.
  7. Open shed and loft, 18×20

C. Open shed, 20×70, with a manger along the entire extent, for feeding cattle tied to rings.
D. Cow stable, arranged with stalls.
E. Tool house, 20×26, for farm implements.
F. Corn house and granary.
G. Carriage house, 24×26, and horse stable, 18×24—hay lofts above.
H. Calf house, with divisions, mangers, troughs, &c.
J. Piggery, 24×24, with cooking and stove rooms.
K. Ice house, 12×18, filled in with tan.

All the barn and stable doors slide on rollers affixed to the top of each door.

Mr. Morse has erected about 100 rods of wire fence, and esteems it a cheap and durable fence, costing about seventy-six cents per rod; the posts are of cedar, and the wire is number 9.

Drainage.

When considering the subject of springs, allusion was made to the large proportion of the soil which during a part of the year is too wet for tillage, caused by the numerous springs issuing from the hill sides; and also oozing from swamps and marshes, affecting unfavorably a large area of the county.

There are no present means for determining the number of acres thus injured, but the extent is so great as seriously to call for remedy. Too moist for grain, these lands are devoted to grass, under a mistaken idea that a better profit is thus secured, or at least that no loss is incurred; if however the owners would examine the grass produced from wet fields, or the hay taken from their surface, they would find each of little value, compared with the nutritious grasses and hay taken from cultivated dry grounds; the grasses on wet fields being chiefly aquatic plants.

The waste lands and unproductive fields have attracted the notice of many farmers, and various attempts have been made to disperse or discharge stagnant or surplus water. In some cases trenches have been dug two or three feet deep into which slabs were laid on rough scantling; into others stones have been thrown to the depth of one foot; in either case they were then filled and left to perform the required duty. Such drains cannot do much service and in general are a waste of time and labor; those made with slabs decay in a few years, and those of loose stone soon fill with earth and become impervious.

Mr. Alpheus Morse has constructed a drain by placing stone firmly on each side of the trench upon which he placed a horizontal layer of flat stones or cap stones, thus leaving a passage for the water six inches square; above the cap stone he placed a quantity of cobble stones and then filled the trench with earth. The expence of this drain is estimated at fifty cents per rod. The recent introduction of machines for making drain tiles and drain pipes of various sizes will supercede these old systems, not from their greater economy only, but likewise because of their more perfect and continued action in carrying off surplus moisture.*

It is estimated that drains may be constructed three feet deep and laid with the tiles made by Whartenby, of Waterloo, at a cost of about thirty-seven cents per rod. The extensive swamps and marshes of the county, need the aid of surveyors and competent engineers to produce efficient results. Public spirited individuals have pressed the importance of this subject; Colonel Miller has by his own exertions opened the Peterboro' swamp, deepening the bed of the Oneida creek, and cutting ditches four feet deep.

Noxious Weeds.—With the progress of cultivation and the introduction of the cereal grains and esculent vegetables, was introduced a class of vegetable exceedingly annoying to the husbandman, both from the obstinacy with which they retain their hold upon the soil, and the mischief done to his crops.

Many noxious weeds indigenous to the soil, and troublesome for a number of years after the lands were cleared, have gradually disappeared, and at this day are scarcely to be met with; among these are the *fireweed*, which springs up in abundance after the fires, by which the brush and rubbish was consumed, had passed over the surface. The down or plume attached to the seeds of this plant, was exceedingly annoying to the eyes of the men engaged in harvesting the grain among which it grew; and in thrashing, the fog of down raised by the flail was almost suffocating. This weed, however, soon disappeared, and strange intruders took its place.

At the head of noxious weeds now infesting our fields, stands *Oxeye Daisy*, or by some called the white daisy, the (*Chrysanthemum leucanthemum*) of the botanist. It, according to the best accounts, appeared on certain farms in almost every neighborhood about the same time, not far from forty years since. In the eastern states it has been known for more than a century, and doubtless found its way west in seed grain or grass seed brought from that region. The plant is numerously supplied with seeds which are very tenacious of life. A single head of seed often produces as many as 150 or 200, and a root favorably situated may bear twenty-five perfect heads of seed, giving an aggregate of 3000 to 5000 seeds from a single grain. The numerous seeds produced soon scattered the pest over the entire county, and scarcely a meadow or pasture lot is now to be found not infested with this weed. Many prudent farmers on its first appearance made vigorous and protracted efforts to remove it from their fields by pulling up by the roots every plant as fast as it appeared; but the enemy was too numerous and insidious in his approach, to yield to this mode of warfare; all have now despaired of success in this way. How the plant is to be exterminated is yet a problem. Judging from the success met with in various experiments, the best hope appears to rest in a series of rotations of crops, in which hoed crops shall succeed the heavier growths of clover, by which the daisy is first smothered above ground, and then the roots destroyed by the thorough tillage of hoed crops. In this course, as few alternations of the fine grains should find a place as practicable. The object aimed at should be, first, to prevent the plant from going to seed; and second, to destroy the root in the soil. It will also be an advantage to stir the surface often, by which the seeds already in the soil are induced to germinate, and danger of a future growth removed. It is generally thought important to destroy the vitality of the seeds, thrown with chaff, &c., into the yard. This is best effected by fermenting the manure before it is applied to the land.

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* For an account of these machines, of the tiles and mode of using, see the State Society's Transactions for 1848, page 223.

All agree that the only way to make any headway against this, as other noxious weeds, is to make the land rich, and bestow upon it thorough tillage. Thus the crop of grass or grain sown is enabled to overtop the weeds, and aid materially in destroying them. Thus far, the most that has been done to effect their eradication, is to check their growth and propagation, no one having yet succeeded in perfectly destroying them. It is perhaps true that no certain way is known to effect their destruction; but a systematic and persevering effort is required, adapted to the nature of the soil, the variety of crop to be raised, and other modifying circumstances. When growing, the juice contains a *bitter* ingredient, not palatable either to sheep, cattle, or horses, but when wilted and cured, the bitter taste disappears so much, that they are readily eaten by all kinds of cattle, horses, and sheep. This is also true of several varieties of weeds.

The Canada Thistle next to the daisy is a pest and scourge to the farmer. It was found in the Indian clearings in the north part of the county when first settled by Europeans, and made its way pretty rapidly over the county as fast as the country was opened. The plume attached to the seed of this plant facilitates its transportation by winds to a great distance from the place of its growth and lodges the germ in every locality. Like other seeds it is also carried to remote regions by the current of brooks and rivers into which the seed may fall, by birds feeding upon the seeds, and cattle browsing the tops off. The roots of the thistle are exceedingly tenacious of life, running to a great depth, and when brought to the surface send forth one or more shoots at the joint. Although much more annoying when grown among grain than the daisy, they are less deprecated and feared by the farmer, for all concur in the opinion that the thistle may be exterminated if attention is given to the matter. Many indeed have nearly or quite rooted them out from their farms, while scarcely one feels sure that any thing has been accomplished against the daisy. Many by mowing alone have entirely destroyed them. To accomplish this, however, the soil must be rich so as to smother the growth of the thistle by the luxuriance of the grass or clover. Mr. James H. Dunbar, of East Hamilton, completely subdued the thistles upon a piece of land by first hoeing thoroughly, sowing barley, and seeding with clover. The clover was mowed early the next season and the sod turned over and sowed with buckwheat, and seeded again with clover, mowed once, turned over and hoed again, when all the thistles had disappeared. By this course of tillage and cropping the seed in the soil was induced to germinate, and the young plant destroyed before the root had extended far. Canada thistles are without much difficulty destroyed and are gradually disappearing in all parts of the county.

The Butter Cup, or Yellow Daisy, (Ranunculus acrida,) is abundant in moist meadows and pastures, clothing the landscape in the season of their bloom with a mantle of golden hue. They are readily extirpated by thorough tillage, and making the surface dry and rich.

Mosses of several varieties, are among the most destructive nuisances to the pasture and meadow lands of the county; yet so unostentatious in their appearance that they have often ruined the growth of grass before the farmer is scarce aware of its existence. The appearance of these mosses is a sure indication of excess of moisture.

The Tory Weed, or Stick Tight, is a pest common to all parts of the county. It is easily removed from tilled lands and usually finds a safe retreat only in waste lands and uncultivated pastures. None but a most reckless farmer will suffer a weed so easily destroyed and yet so very ruinous to the value of wool, to grow for a single season upon his lands. It is like the mullen and common thistle, biennial, not maturing the first year; hence the opportunity to search out and destroy it is given for two years. The awns or hooks attached to the shell of the seed attach it to the wool of sheep and bid defiance to all efforts for removing it from the part entangled; and wool thus set with burs is almost valueless.

A large number of other weeds injurious to vegetation are common to the county, all of which are easily removed by making the soil rich, and thoroughly tilling it, the only sure means of exterminating any noxious plant.

INSECTS INJURIOUS TO VEGETATION.

The ravages of insects have frequently interfered with the labors of the farmer; the grains and grasses are alike subject to their voracious appetites, bringing vexation and disappointment in their train. The following remarks from the pen of Mr. Thomas Barlow, commend themselves to the agriculturists of the county, and are worthy of their careful perusal and consideration:

"There is nothing in the entomology of Madison county peculiar to its locality, and not common to most parts of the State. The uplands and lowlands have their variant kinds of insects; and this difference of kinds is dependent upon the localities whether they are wet or dry, and prevails through all countries. It is a law of nature, that the vegetation of uplands which are high and dry, shall differ from those which are low and wet. So it is with the insect world; some are to be found only in one kind of soil, others in another; some are aquatic; others are to be found only in dry and particular soils. Some insects seem to be governed less than others by this rule, and are to be more generally found in soils both high and low, wet and dry."

The *May bug* for instance, is of this kind; it is abundant in its larval state in our dry uplands and wet lowlands, in our dry pastures and meadows, and in our swampy soils. The grub of this beetle is often found in decayed wood, under logs, and in marshy wet soils where vegetable matter greatly prevails; but they seem to be far more abundant in dry and light or sandy soils, and where the turf prevails, upon the roots of which they feed. This insect is too common to need much extent of description; in its perfect state, it is a large clumsy beetle, of a light chesnut color when it first comes out of the ground to the light and air, but soon turns darker, bordering in color upon black. It is known by various names, as the May bug, May beetle and Cock chaffer.

They appear in May, about the middle or latter part, or the first of June, depending upon the temperature of the season In the larva state they are commonly called the white grub, and are of various sizes, dependent upon their age, from one to five years.

The first year they are quite small, and grow before perfection, sometimes to two inches in length, and to the size of a man's little finger. They have six legs near the head, as is the case with the larvæ of most all beetles. They are injurious to vegetation in both their grub and perfect state, but commit greater ravages in the grub, and often destroy pastures and meadows by devouring the roots of the grass. They are more destructive in a dry than in a wet season, not as some suppose because they are more numerous, or eat more, because of the weather, but because the grass dies the more readily from their eating, without the invigorating and supporting aid of rains to sustain it.

Some writers and naturalists consider them harmless in their perfect or beetle state; but this is a mistake; they, as all beetles are, masticating insects, and feed upon coarse food, as the leaves of trees; they many times entirely strip large trees of their foliage, and greatly injure if not destroy them. Cherry trees have been entirely denuded by them, as if by the frosts of winter. So also other fruit and forest trees, as the apple, elm, and butternut. They appeared in the springs of 1849 and 1850, in one part of our county, (in Lenox,) in immense numbers, so that their ravages were greatly feared as they attacked the trees with great voracity. They came out of the earth in the night, and arose to the trees making the air vocal with the hum of their wings. The soil was sandy and light from whence they came; some of the lands being in pasture, and some under the plow. They continued from eight to twelve days. Great quantities were destroyed by making fire heaps in their vicinity in the night, then shaking the trees, when the beetles would fly into the fire and be consumed. This is undoubtedly the most effectual way to destroy them, although many may be taken by spreading cloths beneath and shaking the trees; they will fall and may be destroyed.

They are food for birds and animals when in the grub and beetle, and in this we have a check upon their otherwise overwhelming increase. No very serious extent of damage has been experienced from them in this county for many years although some grass lands have been injured. Grain crops are seldom if ever affected by them so as to render the injury visible.

The *Cut Worm* has been and is often very destructive in cornfields and gardens, by eating off corn, cabbages, and other vegetables, but mostly those named. They are of a dark green color, of a greasy appearance when full grown, and appear mostly in the evening or night, although sometimes in a damp, dark, or cloudy day they will come from their holes in the ground to feed; this, however, is very seldom. They often cut off the young plant and draw it to the mouth of their hole, and sometimes partly into it; from this they may many times be traced and found; they burrow near the plant they have eaten, and usually lay but a little way beneath the surface of the earth, just sufficiently to secure them from the sun and light. By a little labor they are easily found and destroyed. The only reliable and certain way of preventing their ravages, is to pass over the garden or field in the night, with a strong light, examine the hill of corn or the plant, and if the worm is there to destroy it. Some have supposed ashes or lime would kill them; this is a mistake, for they will contentedly burrow in both after the air has acted upon them for a short time. This worm comes from a miller or moth, which is also nocturnal in its habits and appearance; but as troublesome as it may be, it is far from being as much so as the *wire worm.* This insect is the larva of a small sized snapping bug so called. This bug, or rather beetle, is known from its pushing and snapping when pinched between the fingers, or laid on its back on the ground or floor. The worm is known from its first light and then dark yellow color, according to its age; and takes its name from its hard and wiry feel; it destroys all kinds of grain, except buckwheat, teasels and clover, by feeding upon the seed and roots in the ground. It is often very injurious to potato crops; not so much by injuring their growth, as by rendering the potatoes unfit for use by cutting and boring into them. As with the grub of the May bug, they are most numerous in turf grounds, though all soils contain them in greater or less quantities. Thorough and frequent tillage is the best remedy against them, as this temporarily deprives them of food and exposes them to frosts, and to birds that feed on them. Many experiments have been tried by farmers to prevent their ravages by soaking their corn or grain in various preparations, or by putting lime or ashes in the hill; but all these experiments are of little avail; if the grain or seed is sound, yet the root is exposed and is left liable to be pierced and destroyed with equal certainty.

The *Wheat fly* has been troublesome more or less for several years past. Four or five years ago it was very destructive to many fields of wheat, so much so, that fields of many acres were not reaped. Since that time, but little comparative injury has been done. During the season of their greatest ravages, flocks of yellow birds were seen busily employed in the wheat fields, picking the wheat heads to pieces, and farmers were alarmed at the seeming destruction of their crop by birds; they resorted to various ways to kill them or drive them away. But this impression is the result of a want of knowledge of the habits and instincts of birds. A thought would have corrected the error, for it was nothing new for wheat fields to exist, whilst the birds were equally plenty, but made no attacks on the grain; but it was new to have such armies of insects in the wheat; and the conclusion was natural, legitimate and certain, that the birds were after the larvæ of flies, and were therefore our friends rather than foes. And here it should be remarked that birds of all kinds are fond of insects in the states of their various changes, as well as when perfect, with few exceptions; and are in constant persevering search after them, on the ground, in the air, on the trees, shrubbery, plants and grain; and although they may sometimes be too free with fruit, and commit depredations upon our crops, or poultry yards, they are an army of guardians and protectors, holding our insect enemies in check, and repaying a thousand fold for all the wrongs they may do.

Were it not for birds, it would be extremely difficult to foresee or imagine the extent of increase of our insect foes. Every farmer and every man who would protect his crops, trees and gardens, should seek and desire the increase rather than the destruction of birds of all kinds, and consider the person who would shoot or drive them away, as doing that which would be far more injurious to his interests than he who would sow broadcast over his lands the most noxious and troublesome weeds. Whilst much is said, and much expended in efforts to prevent insect ravages, a constant war is kept up by men and boys against the feathered tribes, which are far more effective and useful in the work than any means or measures to which man can resort for his own protection.

Nothing new can or need be said on the subject of the wheat fly and weevil, beyond what has been said by Mr. Gaylord in his prize essay, forming a part of the State Agricultural Society's Transactions for the year 1843, and by Mr. Gavit, in the same work for the year 1850; all of the insects, with few exceptions, spoken of in this report, are there described and pictured in their various states and transformations, and hence it is unnecessary to describe them more particularly now, but refer to those works for the scientific names, peculiar appearances and habits, for the benefit of those who may desire a closer study of the subject.

The *Curculio* or beetle commonly known as injurious to plums, are more alarming in the prospect than any other insect of which complaint is made. They seem to resist and defy all efforts yet made against them, or to prevent their depredations. They have interfered with the fruits of this region for ten years, but more intolerably within the last four or five years. They are evidently on the annual increase, and during the past season they have been more numerous and destructive than in any former year. They have recently attacked the cherry trees; they sting the limbs and destroy them. Not content with the destruction of the fruit, the trees are now ruined by them. Plums, peaches, cherries, apricots, nectarines, and apples are subject to their depredations, though plums and smooth-skinned fruits are more so than other kinds. The curculio appears early in the spring, and are the most numerous, as some observers say, when the tree is in blossom. They inflict the injury upon the fruit when it is from one-fourth to one-half grown. They appear at all times through the summer, and often sting the ripe fruit. They fly readily, though they are apt to drop to the ground when the tree is shaken on which they rest. Early fruits are more subject to their sting. From one to four is the number of their larvæ, and are usually found in the plum fruit. Four or five eggs or larvæ are sometimes found in the peach, and ten or twelve in the nectarine. They sting the limb as well as the fruit, with their rostrum or nose, and then deposit the eggs in the puncture thus made; but one egg is deposited usually in one place, though the same insect will deposit several eggs in several places. Twelve or fifteen of the larvæ are sometimes found in one knot on a tree. They pass through their change from the egg to the perfect state or insect, in the same year, unless the egg is late, then it passes over winter. Like most other insects they perform their mischief mostly in the night season; it is but a few days before they pass from the egg to the larvæ state, and in four weeks they are perfect insects. If the season is warm there may be two generations during the summer.

Various opinions are entertained as to the best method of destroying them, but none seem to possess any real value. With some, slaked lime thrown over the trees is a supposed preventive, but this is entitled to no more confidence than shaking them from the tree; in either case it is but a suspension of their labors, they cast themselves to the ground at a touch or jar of the tree, or upon the sprinkling of the lime, but the lime itself is in no wise offensive to them. Others recommend suspending open bottles in the tree, with fluids in them that will attract the insects, which must perish if they enter, as they cannot escape; this of course will destroy a few, but leaves the main evil unaccomplished. The most promising, though troublesome preventive, is the constant watching and frequent shaking the tree, destroying the beetles as they fall into a sheet or blanket spread for the purpose: by a quick shake or jar of the tree, they will gather up their legs, and falling to the ground will remain motionless for a short time, they may then be destroyed if seized before they arouse and fly away. There are many substances offensive to insects, from the use of which relief might be found, if it were not for the wind driving the current of offensive odor away from their resting places: fish oil and other oils, turpentine, and similar fluids would be effectual, and offensive to them, if any method of application could be devised.

Several kinds of forest worms have appeared in this county from year to year, acres of trees have been stripped of their foliage, and the people have feared an entire loss of their woodlands. There is one kind produced by a small white moth; when in the larva state, it spins a web like the spiders in the trees, many acres of trees are curtained with these webs, with scarcely a green leaf for contrast. Although a threatening evil, there seems but little to be apprehended, for trees seldom or never die from their ravages.

There is another worm, which is the larva of a light chestnut colored moth, and sometimes very numerous in the wood lands, it closely resembles the common apple-tree caterpillar or worm, except that it is about one-half smaller. The parent millers or moths have a close resemblance to each other, differing in size only. Both kinds belong to the Bombicedæ or spinning worms; but whilst the apple tree worm winds its cocoon in some secret place, the other worm wraps itself in a leaf of the tree, and within this shelter spins its silken cocoon, goes through its changes, and comes out in from ten to twenty days.

In 1850, armies of these worms appeared in Lenox, and in most parts of the county; it was here in 1848, and its ravages are remembered in 1824. The worms of 1850 left the forests and appeared in the apple orchards; when matured in the larva state, many of them left the trees, visited the corn fields, and rolled themselves in the corn leaves, to the dismay of the farmers. Thirteen of their cocoons were obtained, from which seven Ichneumon flies, and five moths were hatched. One did not open; this proved that seven-twelfths of the worms were already destroyed by the Ichneumon fly, which is one of man's best friends and protectors against the ravages of the insect world. It is safe to say that if those thirteen cocoons had been left in the field, exposed to the attacks of the Ichneumon, not one quarter of them would have produced its own perfect insect. The Ichneumon fly is an enemy to the rest of the insect world, and is ever seeking the larvæ of other insects as its prey, or as a deposit for its own eggs.

While man suffers from insect depredations, there is no doubt that, upon the whole, he is benefited by the existence of these supposed enemies. They feed upon and destroy the seed and substance of many weeds annoying to man, and though his crops are sometimes lost by insect ravages, he should remember that his losses are at times equally great by visitations of storms and tempests, winds and droughts; yet he would not annihilate the sun, prevent rains, nor have an eternal calm. He might as well entertain a desire so impious, as to wish the destruction of the insect race.

He may obtain some temporary relief from their depredations by sagacious power to check their career; but he must rely upon that system and order of nature which produces checks and corrections against a preponderating ascendancy of any one department of creation to the ruin of another. It seems true that the insect world is the connecting link and counter check between animal and vegetable life or kingdom; and that the safest remedy of man against the ascendancy of the insect world, is the faithful and thorough tillage of the ground for the nourishment, and strength, and support of the crops he would raise, that they may the better resist the enemy, whilst the frequent stirring of the soil will kill and destroy the eggs and larvæ of the insect race.

Whilst it is perhaps useful to the cause of science, and beneficial to the interests of the farmer to investigate the subject of insects, their instincts and habits, with a view to a remedy against their ravages; yet history, of even but a few years past, must satisfy the reasonable mind, that the efforts of man are faint and hopelessly impotent against them. The wheat fly and the weevil are the most formidable enemies of man, as they strike at his crops of wheat which constitute his hope and the basis of the commercial intercourse of our country, as wheat is the principal staple of the northern States. One season, their ravages cast dismay over the fertile fields; and if man's arms were his only protection, the succeeding years would present the ruin of crops, which, if saved from the destroyers, would have produced their millions; but the season follows, and scarce a field is visited with injury. It is a gratifying fact, also, that an all prevailing principle of want and supply in nature when one kind of insect gets the ascendancy, and becomes prevailingly abundant, its enemy soon increases in the same ratio, and succeeds in gaining the victory.

To the unobserving man, these things are unseen; he sees in one year great danger in the armies of worms which are stripping his trees of their foliage, apprehending utter destruction in the ensuing year; but, to his surprise, scarce a nest or a worm is to be seen. What protected him he knows not, but he attributes the cause, perhaps to early or late frosts, a hard winter, or a wet season; all of which have not the least bearing upon the true cause.

That something may be done for the protection of grain or corn from cut-worms and some other kinds of insects, and to some valuable extent is undoubtedly true, and to this end the mind may well be turned. So also there may be much in the season for planting or sowing grain, to give it a start ahead of the insect, or delay it until after the season or stage of the larvæ or predaceous state of the insect. Experience, observation and science may accomplish much in this way. Whilst man can do nothing toward controling the elements, so as to cause or to arrest rains or storms, which he may fear will ruin his crops, it is undoubtedly true, that by proper tillage he may do much to protect his grain from too much moisture or drought; so whilst he cannot annihilate or conquer the insect world, he can do much to protect himself from its greater ravages.

The interests of the farmer are so far involved in this subject, that all possible encouragement ought to be given to careful, persevering, and scientific investigations of it. There is far more conjecture than truthful understanding in relation to it. It is a branch of natural history most intimately connected with the agricultural affairs and commercial interests of the people, and popular opinion ought to be enlightened upon it for both pleasure and profit. The habits and instincts of other predatory insects might be named, but as they are not directly interesting to the agriculturist, they seem not called for at this time.

The *Slug* or *Slug-worm* is often seen upon the plum and cherry tree, and frequently commits much havoc with the foliage. There is a variety of insects of this kind, and are the larvæ of *saw-flies*. By attention, the slugs are easily destroyed with ashes or quick lime; they are mostly covered with a slimy surface, to which the ashes or lime adheres if thrown through the trees upon them, and kills them.

In June, in the year 1845, the seventeen years cicada, (commonly but wrongly called locust,) appeared in various parts of the county, but more abundantly in the northern towns. They appeared mostly where the soil was clay, sandy or loamy, out of which they came. Clouds of them came forth almost at the same moment, literally riddling the earth with the holes from whence they came. Orchards, hickory, oak, and elm groves, and woodlands were alive with them. They are a haustellate insect, and therefore, so far as destroying herbage is concerned, are harmless. All the injury they do is by stringing the boughs or tender shoots of trees into which they shoot and deposit their eggs. They have an astonishing power in this respect, as they can cut the hardest limb with the same ease as a man could penetrate it with a sharply prepared brad awl. It is done with the ovipositor, or sting projecting beneath the abdomen: the insect rests the ovipositor upon the limb, and then by working and crowding backwards, cuts and drills a hole obliquely through into the pith of the bough, deposits an egg, then advances a short distance and repeats the operation, from five to six times. The outer end of the limb thus stung or wounded, generally dies, and the leaves growing upon it, soon die, become yellow and dry as if singed or injured by fire. Extensive forests are seen bearing bunches of these dead leaves, indicating the vast numbers or quantity of these insects that had appeared. They live but a short time, seldom more than from one to two weeks. These insects should not be confounded with the locusts; for the locust is a masticating insect and may well be feared for the time being, for if they come in multitudes, they are capable of destroying fields of grain and meadows in their way. But this insect, the genuine destructive locust, has never yet appeared, in this part of the world. Varieties of the locust family do appear in the form of grass hoppers and their co-relatives, which many times commit serious mischief; against these no remedy has been discovered by man's wisdom. The only protection against them is to be found in the philosophy before alluded to of check and counter-check in the insect world.

APPENDIX.

AGRICULTURAL PRODUCTS OF MADISON COUNTY.

	Brookfield.	Cazenovia.	De Ruyter.	Eaton.	Fenner.	Georgetown.	Hamilton.	Lenox.	Lebanon.	Madison.	Nelson.	Smithfield.	Stockbridge.	Sullivan.	TOTAL.
Improved acres,	31,321	21,216	12,475	18,120	13,952	9,883	17,200	31,056	18,036	16,527	20,325	10,789	12,108	18,019	251,027
Unimproved acres,	11,464	5,961	4,165	8,529	3,671	7,685	5,697	12,353	14,785	5,285	6,926	3,078	3,417	7,831	100,837
Horses,	887	882	366	859	693	330	621	1,358	399	607	688	447	614	923	9,674
Cows,	2,475	1,963	1,291	1,563	963	961	1,651	2,304	1,919	1,316	1,729	798	1,260	1,332	21,525
Oxen,	338	208	306	305	90	246	44	281	146	167	314	078	90	133	2,746
Other cattle,	1,734	1,396	596	2,164	897	752	1,133	2,162	1,294	942	1,188	738	931	1,402	17,329
Sheep,	11,502	8,159	6,234	6,253	5,649	2,534	4,807	8,485	8,671	11,373	8,166	2,501	2,572	6,611	83,517
Swine,	950	1,150	629	1,168	614	435	909	2,280	1,021	1,880	1,066	592	783	1,649	14,624
Wheat, bushels,	3,733	13,823	3,489	3,806	6,267	2,138	2,184	20,989	3,933	4,321	6,053	6,780	12,785	16,648	117,549
Rye, "	523	446	30	645	230	12	427	521	....	1,070	....	1,712	3,213	3,881	12,720
Corn, "	30,174	29,544	8,709	27,819	12,133	4,781	14,476	61,720	19,087	23,294	13,134	13,421	27,420	37,104	402,816
Oats, "	51,682	53,887	20,555	34,350	35,423	16,906	44,188	73,052	42,760	21,931	39,073	22,365	26,735	72,528	553,435
Barley, "	6,222	27,430	3,266	23,630	42,865	100	6,673	44,414	5,473	16,846	8,941	28,342	30,756	15,918	262,914
Buckwheat, "	1,816	1,416	1,161	861	829	1,431	519	4,217	505	602	1,465	147	163	2,575	17,640
Flax seed,	29	90	276	35	200	9	2	10	7	12	131	45	20	10	876
Clover seed,	15	59	....	....	....	128	4	4	....	....	....	2	....	46	658
Other grass seed,	90	67	68	....	61	....	49	88	35	145	335	49	15	238	1,240
Hay, tons,	11,109	934	5,156	53,139	4,698	4,423	16,824	8,830	13,828	6,916	8,776	2,455	4,472	5,152	137,712
Peas and beans, bushels,	814	3,220	789	1,451	1,222	173	463	1,759	145	714	1,090	936	499	2,657	15,762
Potatoes, "	28,320	25,915	11,045	20,031	12,401	9,612	5,410	43,955	10,577	16,106	21,673	11,945	13,420	20,581	270,989
Butter, pounds,	162,696	136,971	98,600	131,098	83,776	98,600	112,692	148,835	206,234	101,318	127,411	49,590	76,725	87,342	1,621,888
Cheese, "	296,136	177,879	177,450	329,533	120,365	97,900	204,920	98,618	189,276	72,550	286,820	111,670	172,205	73,754	2,309,076
Wool, "	36,258	25,063	16,508	16,460	17,695	31,431	15,854	25,880	23,567	33,844	27,600	10,374	10,660	14,829	306,003
Maple sugar, "	26,485	15,368	17,960	12,195	12,923	22,312	22,161	4,445	14,678	15,685	35,739	8,170	14,698	1,735	244,454
Honey and wax, pounds,	3,638	988	2,305	3,531	2,040	1,147	1,111	1,936	1,104	879	8,571	700	400	3,030	26,301
Domestic fabrics, value,	$2,827	$1,523	$1,894	$1,958	$1,347	$1,450	$1,425	$4,523	$543	$957	$2,671	$866	$1,405	$1,651	$9,040
Animals slaughtered,	$20,489	$21,499	$9,111	$27,288	$11,998	$6,924	$3,810	$26,818	$11,714	$11,493	$22,957	$7,716	$9,116	$13,643	$204,576
Hops, lbs.,	118,924	4,947	21,000	141,305	....	2,900	100,278	3,500	75,233	73,878	3,600	3,400	49,240	1,780	639,915
Population,	3,585	4,812	1,931	3,944	1,690	1,412	3,599	7,507	1,709	2,405	1,964	1,678	2,081	4,764	43,081

TABLE

Showing trades, capital and product in the various towns of Madison County.

	Brookfield.	Cazenovia.	DeRuyter.	Eaton.	Fenner.	Georgetown.	Hamilton.	Lenox.	Madison.	Nelson.	Smithfield.	Stockbridge.	Sullivan.	Aggregate.		
														Capital.	Persons.	Product.
Blacksmiths:																
Capital employed,	......	1,800	$1,200	$6,150	$810	$450	$2,500	$750	1,000	800	......	3,200	1,250	19,460	......	......
Men employed,	......	10	6	24	3	2	7	4	2	5	......	8	8	......	79	......
Value of products,	......	4,255	1,600	10,250	500	1,000	3,134	2,500	1,130	2,000	......	6,900	4,850	......	......	38,121
Blind and Sash-makers:																
Capital employed,	......	4,000	......	......	......	......	......	......	......	......	......	300	......	700	......	......
Men employed,	......	9	......	......	......	......	......	......	......	......	......	2	......	......	11	......
Value of products,	......	25,940	......	......	......	......	......	......	......	......	......	400	......	......	......	26,340
Cabinet-makers:																
Capital employed,	......	2,878	1,400	2,100	......	......	5,000	1,000	......	......	......	900	......	13,278	......	......
Men employed,	......	6	7	8	......	......	31	8	......	......	......	3	......	......	63	......
Value of products,	......	2,000	3,530	2,550	......	......	7,000	1,050	......	......	......	300	......	......	......	16,430
Carriage-makers:																
Capital employed,	$5,000	7,000	1,200	4,800	......	......	1,400	8,000	600	......	800	200	900	900	......	......
Men employed,	18	25	6	12	......	......	3	18	3	......	3	2	5	......	95	......
Value of products,	11,000	13,914	2,000	10,000	......	......	1,500	8,000	4,387	......	2,000	800	1,675	......	......	55,976
Coopers:																
Capital employed,	......	......	......	800	......	......	500	......	......	......	......	......	600	1,400	......	......
Men employed,	......	......	......	8	......	......	4	......	......	......	......	......	2	......	14	......
Value of products,	......	......	......	5,000	......	......	1,845	......	......	......	......	......	1,224	......	......	8,069
Cotton factories:																
Capital,	......	......	......	49,000	......	......	......	......	......	......	......	......	......	49,000	......	......
Persons employed,	......	......	......	89	......	......	......	......	......	......	......	......	......	......	89	......
Value of product,	......	......	......	60,000	......	......	......	......	......	......	......	......	......	......	......	60,000
Farm implement makers:																
Capital,	......	3,000	600	......	......	......	......	......	......	......	......	......	6,000	9,600	......	......
Persons employed,	......	8	6	......	......	......	......	......	......	......	......	......	5	......	19	......
Value of product,	......	7,820	1,257	......	......	......	......	......	......	......	......	......	9,950	......	......	19,027

TABLE shewing capital, &c.,—(CONTINUED.)

	Brookfield.	Casenovia.	DeRuyter.	Eaton.	Fenner.	Georgetown.	Hamilton.	Lenox.	Madison.	Nelson.	Smithfield.	Stockbridge.	Sullivan.	AGGREGATE.		
														Capital.	Persons.	Product.
Distillers:																
Capital,		1,500		7,100					18,000					26,600		
Persons employed,		1		37					16						49	
Value of product,		4,000		14,700					33,200							51,900
Founderies and forges:																
Capital,		6,000	2,500	3,000			8,000	24,000					67,000	105,500		
Persons employed,		9	3	3			3	23					7		48	
Value of product,		8,600	4,500	5,000			2,725	975					11,550			33,350
Gristmills:																
Capital,	$4,800	12,800	6,800	3,000	4,000	5,000	5,000	14,500	8,000		7,000	9,700	16,800	97,400		
Persons employed,	2	6	4	2	1	2	1	8	3		2	3	7		41	
Value of product,	$13,621	47,297	8,900	5,000	Notgiv'n	2,500	2,700	40,660	22,630		14,000	10,900	34,212			211,420
Harness and saddle makers:																
Capital,		2,800	1,550	2,600			2,100	1,400		570	200	1,000	650	12,870		
Persons employed,		16	7	12			5	8		3	2	4	4		61	
Value of product,		7,595	3,100	5,800			3,625	2,825		2,400	1,200	1,200	2,820			30,060
Lime kilns:																
Capital,												800		800		
Persons employed,												5			5	
Value of product,												5,625				5,625
Machinists:																
Capital,		5,100		7,000										12,100		
Persons employed,		7		20											27	
Value of product,		25,340		11,500												36,840
Oil mills:																
Capital,		1,200												1,200		
Persons employed,		1													1	
Value of produto,		1,650														1,650
Paper mills:																
Capital,		20,000											200	20,200		
Persons employed,		11											4		15	
Value of product,		12,000											600			12,600

Pump-makers.																
Capital,	......	1,000	......	......	......	......	......	......	......	600	......	......	......	1,600	......	......
Persons employed,	......	1	......	......	......	......	......	......	......	2	......	......	......	......	3	......
Value of product,	......	2,500	......	......	......	......	......	......	......	1,800	......	......	......	......	......	4,300
Saw-mills:																
Capital,	3,000	5,650	6,200	7,250	3,800	7,300	......	9,200	6,000	8,200	3,000	2,200	14,800	71,100	......	......
Persons employed,	3	17	12	12	6	11	......	12	3	7	3	6	10	......	102	......
Value of product,	9,241	11,795	10,550	8,790	4,830	9,440	......	14,645	9,225	5,820	4,800	3,332	19,990	......	......	111,958
Shoe and boot makers:																
Capital,	......	6,650	700	900	250	700	1,200	2,450	......	550	700	3,063	2,050	19,150	......	......
Persons employed,	......	21	8	9	2	5	6	7	......	4	7	8	9	......	79	......
Value of product,	......	9,850	5,300	5,000	1,100	2,050	3,340	9,450	......	1,200	4,400	3,062	5,675	......	......	50,427
Soap and candle makers:																
Capital,	......	3,000	200	......	......	......	......	1,000	......	......	......	......	......	4,200	......	......
Persons employed,	......	3	2	......	......	......	......	2	......	......	......	......	......	......	7	......
Value of product,	......	11,220	4,000	......	......	......	......	2,200	......	......	......	......	......	......	......	7,420
Stone quarriers and cutters:																
Capital,	......	400	......	200	......	......	800	4,000	......	......	......	......	......	5,400	......	......
Persons employed,	......	4	......	2	......	......	4	4	......	......	......	......	......	......	14	......
Value of product,	......	600	......	750	......	......	1,800	2,000	......	......	......	......	......	......	......	5,150
Tailors:																
Capital,	......	7,625	1,000	......	......	......	......	650	......	......	......	......	625	9,900	......	......
Persons employed,	......	27	9	......	......	......	......	13	......	......	......	......	4	......	53	......
Value of product,	......	19,470	5,200	......	......	......	......	4,174	......	......	......	......	1,100	......	......	29,944
Tanners:																
Capital,	$2,200	37,500	8,500	9,500	......	1,800	29,000	8,200	......	$250	$6,400	$500	$3,500	$107,350	......	......
Persons employed,	2	23	14	8	......	8	11	5	......	1	2	2	5	......	81	......
Value of product,	$2,000	48,400	17,520	10,100	......	8,460	29,600	4,450	......	800	1,200	500	2,900	......	......	94,930
Tin-works:																
Capital,	......	6,000	500	700	......	......	1,000	5,800	2,000	......	1,500	......	450	17,950	......	......
Persons employed,	......	5	2	2	......	......	2	7	4	......	2	......	2	......	26	......
Value of product,	......	9,950	1,600	1,000	......	......	2,525	3,000	4,000	......	277	......	1,100	......	......	$23,452
Woolen factories:																
Capital,	......	155,000	......	135,000	1,200	......	12,000	......	......	......	......	16,500	3,500	323,200	......	......
Persons employed,	......	113	......	187	2	......	15	......	......	......	......	29	34	......	380	......
Value of product,	......	168,600	......	277,900	5,475	......	23,350	......	......	......	......	30,000	34,000	......	......	340,025
Ashery:																
Capital,	......	4,400	500	800	......	......	......	700	......	......	400	......	......	6,800	......	......
Persons employed,	......	4	2	4	......	......	......	2	......	......	1	......	......	......	13	......
Value of product,	......	9,860	1,200	2,900	......	......	......	2,800	......	......	1,800	......	......	......	......	18,560

TABLE shewing capital, &c.,—(CONTINUED.)

	Brookfield.	Casenovia.	DeRuyter.	Eaton.	Fenner.	Georgetown.	Hamilton.	Lenox.	Madison.	Nelson.	Smithfield.	Stockbridge.	Sullivan.	AGGREGATE.		
														Capital.	Persons.	Product.
Railroad car maker:																
Capital,								5,000						5,000		
Persons employed,								15							15	
Value of produce,								12,000								12,000

ANALYSIS.

	BROOKFIELD.			CAZENOVIA.	DERUYTER.				EATON.		
	1 Hill east of Babcocks Mills. Natural.	2 Sam'l Ordway. River flat.	3 Oliver Brown. Drift.	4 Thomas O. Bishop. Shale of h. gp.	5 A. N. Annas. Gravel.	6 E. D. Spier. Gravel.	7 A. N. Annas. Shale.	8 David Main. Gravel.	9 Road side W. of Leeville. Natural.	10 Top of hill from Eaton to Pexpert. Slate.	11 Alpheus Morse.
Potash,	.07	.07	.12	.21	.08	.15	.09	.16	.07	.07	.18
Soda,	.13	.25	.10	.06	.07	.12	.13	.13	.12	.12	.08
Lime,	.24	.33	.22	.26	.39	.40	.48	.21	.13	.18	.58
Magnesia,	.32	.36	.50	.57	.27	.36	.28	.19	.34	.55	.74
Sulphuric acid,	trace.	traco.	trace.	trace.	trace.	trace.	trace.	trace.	trace.	trace.	trace.
Phosphoric acid,	"	"	"	"	"	"	"	"	"	"	"
Chlorine,	.02	"	trace.	trace.	.07	.01	.03	trace.	trace.	trace.	.03
Oxide iron & alum,	6.26	5.21	4.63	8.96	7.67	7.31	6.16	5.36	7.08	8.79	6.36
Insol. silicious matter,	84.18	85.33	87.20	83.28	82.98	82.09	85.10	85.94	84.78	80.77	84.12
Organic matter,	9.07	8.60	7.55	6.66	9.06	9.64	8.45	7.52	7.43	7.58	8.13
	100.29	100.15	100.32	100.00	100.59	100.08	100.72	99.51	99.95	98.06	100.22

TABLE shewing capital, &c.,—(CONTINUED.)

	Brookfield.	Casenovia.	DeRuyter.	Eaton.	Fenner.	Georgetown.	Hamilton.	Lenox.	Madison.	Nelson.	Smithfield.	Stockbridge.	Sullivan.	AGGREGATE.		
														Capital.	Persons.	Product.
Railroad car maker:																
Capital,	......	......	......	......	......	......	......	5,000	......	......	......	......	......	5,000	......	......
Persons employed,	......	......	......	......	......	......	......	15	......	......	......	......	......	......	15	......
Value of produce,	......	......	......	......	......	......	......	12,000	......	......	......	......	......	......	......	12,000

ANALYSIS.

	BROOKFIELD.			CAZENOVIA.	DERUYTER.				EATON.		
	1 Hill east of Babcocks Mills. Natural.	2 Sam'l Ordway. River flat.	3 Oliver Brown. Drift.	4 Thomas O. Bishop. Shale of h. gp.	5 A. N. Annas. Gravel.	6 E. D. Spier. Gravel.	7 A. N. Annas. Shale.	8 David Main. Gravel.	9 Road side W. of Leeville. Natural.	10 Top of hill from Eaton to Pexpert. Slate.	11 Alpheus Morse.
Potash, ...	.07	.07	.12	.21	.08	.15	.09	.16	.07	.07	.18
Soda, ...	.13	.25	.10	.06	.07	.12	.13	.13	.12	.12	.08
Lime, ...	.24	.33	.22	.26	.39	.40	.48	.21	.13	.18	.58
Magnesia, ...	.32	.36	.50	.57	.27	.36	.28	.19	.34	.55	.74
Sulphuric acid, ...	trace.	tracc.	trace.	trace.	trace.	trace.	trace.	trace.	trace.	trace.	trace.
Phosphoric acid, ...	"	"	"	"	"	"	"	"	"	"	"
Chlorine, ...	.02	"	trace.	trace.	.07	.01	.03	trace.	trace.	trace.	.03
Oxide iron & alum, ..	6.26	5.21	4.63	8.96	7.67	7.31	6.16	5.36	7.08	8.79	6.36
Insol. silicious matter,	84.18	85.33	87.20	83.28	82.98	82.09	85.10	85.94	84.78	80.77	84.12
Organic matter, ...	9.07	8.60	7.55	6.66	9.06	9.64	8.45	7.52	7.43	7.58	8.13
	100.29	100.15	100.32	100.00	100.59	100.08	100.72	99.51	99.95	98.06	100.22

ANALYSIS.

	FENNER.		GEORGETOWN.		HAMILTON	LEBANON.		
	12 David Hess.	13 Federal Dana. Loam.	14 Asa C. Nicholds.	15 Truman Amsbury.	16 James Mayr.	17 C. Hoppin. Hill soil.	18 C. Hoppin. Garden.	19 J. L. C. Casler.
Potash,	.07	....	.06	.14	trace.	.20	.08	.13
Soda.	.06	....	.16	.12	.67	.32	.07	.16
Lime,	.14	.33	.10	.33	.06	.37	.27	.48
Magnesia,	.23	....	.28	.23	.58	.44	.59	.66
Sulphuric acid,	trace.	trace.	trace.	trace.	trace.	trace.	.16	trace.
Phosphoric acid,	trace.	trace.	trace.	trace.	trace.	trace.	trace.	trace.
Chlorine,	.04	trace.	.04	.03	trace.	.05	.05	trace.
Oxide of iron and alumina,	6.15	6.38	2.78	8.38	5.03	4.24	5.37	5.51
Insoluble silicious matter,	85.17	80.91	78.94	81.58	89.07	85.82	83.05	79.02
Organic matter,	....	11.93	18.07	9.56	4.53	8.71	10.14	14.01
			100.43	100.37	99.94	100.15	99.78	99.97

ANALYSIS.

	LENOX.				MADISON.	NELSON.		SMITHFIELD.	
	20 S. P. Chapman. Rock top H'd b'g. g'p.	21 Geo. B. Rowe. Bottom land.	22 Geo. B. Rowe. Upland.	23 Edward Fuller.	24 Side of plank road head of Cleveland's pond.	35 Walter Ackley. Chemung rock.	26 Edward Button. Gravel.	27 B. Downer. Soaper farm.	D. Cameron.
Potash, ...	.26	.05	.12	.06	.32	.22	.07	.27	.13
Soda, ...	.76	1.07	.10	.13	.25	.30	.13	.38	.05
Lime, ...	1.95	.93	.38	.26	.15	.31	.20	.40	.36
Magnesia, ...	1.75	.96	.81	.10	.55	.29	.40	1.02	.42
Silphuric acid, ...	trace.	.14	trace.	trace.	trace.	.32	trace.	trace.	trace.
Phosphoric acid, ...	trace.	trace.	trace.	trace.	trace.	trace.	trace.	trace.	trace.
Carbonic acid, ...	2.76	trace.	trace.	trace.	trace.	trace.	trace.	trace.	trace.
Chlorine, ...	trace.	trace.	trace.	trace.	.03	.54	.03	.10	.08
Oxide of iron & alumina,	8.65	4.83	5.17	3.78	3.59	4.44	3.53	6.12	5.57
Insoluble silicious matter,	68.34	70.12	87.34	92.05	90.17	84.21	90.23	82.68	83.01
Organic matter, ...	15.03	21.75	5.91	3.59	5.25	9.25	5.62	9.03	10.19
	99.50	99.85	99.83	99.97	100.31	99.88	100.21	100.00	99.81

ANALYSIS.

	STOCKBRIDGE.		SULLIVAN.				
	29 A. Horton.	30 D. Armour. Gravel.	31 Hill east of Chittenango. Slate natural.	32 Marl of Peterboro swamp.	33 Red slate of O. salt gp.	Clover.	Common hay.
Potash,	.12	.06	.27	....	4.05	4.80	18.11
Soda,	.05	.15	.25	....	.57		1.35
Lime,	.17	.33	1.15	45.02	1.77	6.06	22.95
Magnesia,	.20	.39	.43	.66	.53	00.24	6.75
Alumina,	....	....	....	....	3.09	....	....
Silica,	....	....	....	....	....	78.91	37.89
Sulphuric acid,	trace.	trace.	trace.	....	.06	5.49	2.70
Phosphoric acid,	trace.	trace.	1.06	trace.	.60	3.19	5.97
Carbonic acid,	trace.	trace.	.26	35.00	....	....	....
Chlorine,	trace.	trace.	trace.	....	....	0.17	2.59
Oxide of iron and alumina,	5.61	5.98	10.56	2.69	4.42	0.93	1.69
Insoluble matter,	91.68	89.65	80.72	9.57	86.80	....	....
Organic matter,	2.30	3.92	5.75	7.96	....	....	....
	100.13	100.48	100.35	100.00	101.89	99.79	

ANALYSIS.

	Yates spring, 15.43 grains of mineral matter.*	White sulphur sp'g, 12.66 min'al matter.*	Red shales for paint.	BARLEY.†			WHEAT.‡			HOPS.§		
				Barley grain.	Barley straw.	Total.	Wheat grain.	Wheat straw.	Total.	Hop blossoms	Hop leaves.	Hop vines.
Potash,	....	....	4.05	7.24	10.29	17.53	7.15	22.44	29.59	25.18	14.95	24.35
Soda (sulphate,)	1.66	....	0.57	4.32	.92	5.24	2.73	0.29	3.02	....	0.39	....
Lime,	....	....	1.77	1.39	15.53	16.92	0.85	12.09	12.94	15.98	49.67	38.73
Magnesia,	....	....	0.53	3.97	5.25	9.22	3.63	6.89	10.52	5.77	2.39	4.10
Alumina,	....	....	3.09	0.12	2.26	2.38	....	....	....	....	....	....
Silica,	....	....	86.80	14.36	115.44	129.50	0.35	117.94	118.29	21.50	12 14	6.07
Sulphuric acid,	....	....	0.06	0.05	2.66	2.71	0.07	10.49	10.56	5.41	5.04	3.44
Phosphoric acid,	....	....	0.60	20.74	5.02	25.76	15.02	5.54	20.56	9.80	2.42	6.80
Chlorine,	0.14	trace.	....	0 02	1.58	1.60	....	1.97	1.97	7.24	9.49	6.47
Oxide of iron,	....	....	4.42	0.79	1.35	2.14	0.20	2.35	2.55	....	....	....
Phosphates of iron,	....	....	....	....	....	....	....	....	....	7.45	8.51	0.40
Sulphate of lime,	12.75	8.22	....	....	....	....	....	....	....	....	....	....
Carbonate of lime,	0.88	1.33	....	....	....	....	....	....	....	....	....	....
Sulphate of magnesia,	....	3.11	....	....	....	....	....	....	....	....	....	....
Organic matter,	trace.	trace.	....	....	....	....	....	....	....	....	....	....
	15.43	12.66	100.89	53.00	160.00	213.00	30.00	180.00	210.00	100.00	100.00	100.00

* Grains in one pint of water in each spring.

† 40 bushels of barley and its straw contains 213 pounds of mineral matter.

‡ 25 bushels of wheat and its straw contains 210 pounds of mineral matter.

§ The per centage of dry ash produced, was 9.87, 13.60, 3.74.

MARLS.

The origin of extensive marl beds has been a subject of much conjecture, and different conclusions have been adopted by various individuals who have attempted a solution of the question. A train of evidences have brought me to the adoption of the following theory, which, however, is submitted, with due deference to the opinions of those who from any cause may adopt some other. So large a body of shells could hardly be supposed to have been produced, except in some body of water of a considerable extent. And since they are fresh water shells, like those now existing in lakes and ponds in this region, it is only fair to suppose that where these marl beds are found, though now often destitute of much water, they must have been at some time past, the beds of ponds or lakes which the shell fish, from whose shields the marl is formed, inhabited. Some of these ponds or lakes seem to have been obliterated or filled up by the shell of its deceased inhabitants, thus the dead in time usurped the abode of the living, while others are now rapidly undergoing the same process. As an example, the small pond in Madison may be named, which the old people of that region say, has on one side been filled up for as much as twenty rods within their memory, say fifty years; and the beach on the side where the filling up has taken place, is composed entirely of white marl and shells. The reason why the accumulation has occurred, appears to be that the pond is sheltered on all sides by a gravel bank about eighty feet high, so that, as the shells rise to the surface, they are always floated to the side of the outlet, instead of being driven to all sides, as is often the case, where the surface is exposed to winds from various directions. At the rate at which this pond has filled up for the last fifty years, it will, in the course of two hundred years, be quite obliterated, provided the same causes continue to operate.

At Lord's pond, in Hamilton, the marl has principally accumulated upon three sides, viz: the north, east and south; the outlet of this pond, which contains about seventy-five acres, has been lowered about one foot and a half, by which its area was considerably diminished, and the shores before mirey, rendered quite solid.

While standing upon the marl beach, small shells, such as are found in the marl, were observed floating to the shore one after another, and lodging upon the beach. These shells, are of themselves, heavier than water, and would not float unless buoy'd up by air or some æriform gas; all the foregoing circumstances being taken into the account, it appears naturally to suggest the following conclusion: "that the marl beds are composed principally of shells either whole or ground into powder by pressure, and the action of the waves; that the shell fish inhabit the bottom of the lake where they live and die; but when putrefaction takes place gases are formed, which being retained in the chambers of the shell, bring it up to the surface, when it is driven to the shore by the wind, or floats there by the current."

This process carried on for ages, would produce extensive deposits, and if not arrested, would eventually fill up and obliterate bodies of water of moderate extent. In this way, if the current flowing from the pond was large, a portion of the shells would be washed out of the pond or lake, and form deposits of marl along the stream, which would account for such deposits often found in beds along the course of creeks.

MADISON COUNTY AGRICULTURAL SOCIETY.

The Madison County Agricultural Society owes its origin to the act "to promote agriculture," passed by the State Legislature May 5, 1841. Under this law the annual sum of 120 dollars was apportioned to the county of Madison, under certain conditions, which were complied with, by the formation of a County Agricultural Society, and the collection of upwards of one hundred and twenty dollars as fees for membership.

To form the society, a meeting of the citizens of the county was assembled in the court house at Morrisville, on the first day of September, 1841, and organized by electing J. D. Ledyard, of Cazenovia, Chairman; and H. G. Warner, of Sullivan, Secretary.

A committee of five was appointed to draft a constitution, viz: Jonathan Woodward, of Cazenovia, David Dunbar, of Hamilton, Ezra Leland and A. S. Sloan, of Eaton, and H. G. Warner, of Sullivan, who reported a constitution, which was adopted. The constitution having been signed by more than fifty members, the following officers were elected: J. D. Ledyard, of Cazenovia, President; Elijah Morse of Eaton, H. G. Warner, of Sullivan, J. H. Dunbar, of East Hamilton, Vice Presidents; Alexander Krumbhaar, of Cazenovia, Corresponding Secretary; A. S. Sloan, of Eaton, Recording Secretary; Uriah Leland, of Eaton, Treasurer; and fourteen managers, one from each town. Since that time the following gentlemen have presided and zealously promoted the agricultural interests of the county: 1842-3, George B. Rowe, Lenox; 1844-5, Seneca B. Burchard, Eaton; 1846-7, John Williams, Cazenovia; 1848-9, Benjamin Enos, DeRuyter; 1850, Lewis Raynor, Cazenovia; 1851, James H. Dunbar, East Hamilton; 1852, Elijah Morse, Eaton.

The fairs and cattle shows of the society have been held annually at the various central villages in the county, and have uniformly been occasions of much interest. The farmers and mechanics of the county have brought to the yearly festivals, for exhibition, the fruits of their intelligence and industry, accompanied by their wives, sons and daughters, and enjoyed the holidays thus afforded, in a rational and most satisfactory manner. The cattle shows have been attended by a large concourse of all classes of our inhabitants, and their salutary influences upon those not directly contributing to the articles on exhibition have been manifest, exciting them to emulate their more energetic or successful neighbors. Thus a wide spread influence has been exerted throughout our farming community. Addresses upon some subject intimately connected with the interests and operations of the farmer, have been listened to, and become the theme of discussion among the various circles of industry within our borders. Until the present year, the exhibition of articles have been opened to all *free;* but the experiment was made at the last show, of erecting an enclosure, and charging an admittance fee of 12½ cents. The plan is approved, and has added to the funds of the society, a sum of over two hundred dollars; this will doubtless be pursued at the future shows of the society. The first premiums on the leading articles exhibited, have been awarded to the following persons since the foundation of the society:

AWARDS.

Year.	Farms.	Stallions.	Mares and Colts.
1842,		D. E. Hills,	Clark Buck,
1843,		I. Hills,	D. Welch,
1844,	Daniel Gates,	E. Brand,	H. Ehle,
1845,	A. Aureas,	No award.	O. A. Benedict,
1846,	No award.	W. C. Benjamin,	Daniel Gates,
1847,		G. B. Rowe,	F. B. Hoppin,
1848,		John Babcock,	John Muir,
1849,	D. Hess	C. A. Sherrill,	C. D. Miller,
1850,	A. Morse,	G. Ackley,	H. R. Ackley,
1851,	H. P. Potter,	M. W. Porter,	O. Hazard,

	Barley.	Butter.	Cheese.
1842,		I. S. Pierce,	D. Hess,
1843,	S. Spring,	I. S. Pierce,	S. Burchard,
1844,	N. Tidd, 66 bu.,	S. T. Fairchild,	A. S. Hyatt,
1845,	S. Spring, 67 bu.,	J. N. Dunbar,	S. A. Warner,

AWARDS—(Continued.)

	Barley.	Butter.	Cheese.
1846,..		M. Reed,	H. R. Sherrill,
1847,..	Benj. Enos,	Mrs. D. Ladd,	E. Morse,
1848,..	Benj. Enos, 54 bu,	Mrs. U. Coe,	O. F. Ladd,
1849,..	D. Hess, 56 bu.,	J. C. Graham,	S. B. Burchard,
1850,..	P. J. Farnham,	C. L. Chappell,	J. B. Morse,
1851,..	P. J. Farnham,		

	Matched Horses.	Durham Cattle.—Bulls.	Durham Cattle.—Cows.
1842,..	E. Morse,		
1843,..			
1844,..	D. Gates,		
1845,..	A. Morse,		
1846,..			
1847,..	James Sheffield,		
1848, .	Geo. B. Rowe,	S. P. Chapman,	
1849,..	C Morey,		
1850...	J. S. Wheeler,		
1851,..	J. B. Mason,	S. P. Chapman,	S. P. Chapman,

	Fine Wool Sheep.	Coarse Wool Sheep.	Grade and Native Bulls.
1842,..	D. Baxter,	E. Morse, 5 ewes,	W. Ward,
	C. Foster,	C. R. Ackley,	
1843,..	William Coolidge,	C. Fay. A. Morse,	A. Morse,
1844,..	I. Smith,	W. L. Smith,	Z. Douglas,
		S.E.Wormer, ews	
1845,..	John Patten,	A. Morse, buck,	C. R. Ackley,
	C. C. Payne,		
1846,..	C. Hoppin,	E. Morse,	
1847,..	C. C. Payne,	P. C. Blakesley,	
	W. Burnham,		
1848,..	L. Howe, buck,	Geo. E. Morse,	
	S.P.Chapman,ew's,		
1849,..	E. L. Gage, buck,	E. Morse,	
		O. A. Benedict,	Bicknel & Root,
1850,..	E. L. Gage,	E. R. Robertson,	
	C. C. Payne, buck,	A.W.Dennison, b'k	
1851,..	C. Hoppin, ewes,	John,Muir, Sr.ew's	A. White,

	Devon Cattle.—Bulls.	Devon Cows.	Fat Cattle.
1842,..			D. Dunbar,
1843,..			
1844,..			

AWARDS—(Continued.)

	Devon Cattle—Bulls.	Devon Cows.	Fat Cattle.
1845,			Wm. Lord,
1846,	D. Osgood,		C. Leach,
1847,			D. Bebee, oxen,
1848,			C. Leach, cow,
1849,			C. Leach,
1850,	John Muir, sen.,		J. D. Ledyard,
			A. Morse, cow,
1851,	John Muir, sen.,	John Muyr, sen.,	John B. Coe, oxen,

		Milch Cows.	Plowing.
1842,		T. C. Nye, $5,	S. Spring,
1843,		W. Ward,	J. N. Dunbar,
1844,		L. A. Gilbert,	J. N. Dunbar,
1845,		E. M. Andrus,	S. A. Gilbert,
1846,			S. Roberts,
1847,		N. S. Roberts,	D. Beebee,
1848,		E. Morse,	C. R. Ackley,
1849,		A. Morse,	S. P. Chapman,
1850,		S. Watson,	P. J. Farnham,
1851,		J. D. Ledyard, jr.,	B. Wilbur,

	Wheat.	Oats.	Corn.
1842,	Nath'l Tidd, 32 bu.	D. Gates, 98 bu.,	B. Coman, 117 bu.,
1843,	D. Gates,		U. Leland,
	D. Gates, W., 43½,		
1844,	U. Leland, S., 48½,	P. Baldwin, 106½,	B. Enos, 147 bu.,
1845,	T. A. Clark, W. 53,		R. Jackson, 123 bu.
1846,			L. B. & E. A. Powell,
1847,		Benj. Enos,	J. A. Coon,
1848,	J. A. Coon, 35 bu.,	Benj. Enos, 86 bu.,	B. Enos, 92 bu.,
1849,	J. A. Coon, 27 bu.,		A. Murray, 99 bu.,
1850,	L. Raynor,	D. Hess,	O. A. Benedict,
	B. Enos, 3d., 25,		
1851,	L. Raynor, 38 bu.,	P. J. Foreman, 61.	O. A. Benedict, 83

Proceedings of the Society, for the year 1851.—At a meeting of the Executive committee, held at Lewis's hotel, in Morrisville, January 7th, 1851, the president, treasurer, recording secretary, Benjamin Enos, David Hess, H. Hawks, P. J. Farnham, O. A. Benedict, Lewis Raynor, S. P. Chapman, B. B. Stewart, and William Wells were present. The premiums on the several grain crops were awarded, after which, the premium list, for the past year, was so amended and altered as to correspond with the financial condition of the society, and adopted in the form given under the award of premiums at the annual fair. The president, treasurer, and recording secretary were appointed a committee to locate and make arrangements necessary for the next fair.

The *semi-annual meeting* was held pursuant to adjournment, on the 10th day of June, at Lewis's Hotel, in Morrisville. Present, the president, Elijah Morse, Benjamin Enos, David Hess, S. P. Chapman, R. D. Palmer, Lewis Raynor, George B. Rowe, John Potter, C. D. Miller. After reading the minutes of the last meeting, and the treasurer's report, it was

Resolved, That the next fair be held at Hamilton on the 1st and 2nd of October.

Resolved, That the admission fee be one shilling for each person.

Resolved, That the president and Benjamin Enos, be a committee to secure a speaker for the fair.

The following persons were appointed the judges in the following classes:

Local Committee.—James B. Eldridge, John J. Foote, Lewis Wickwire, E. Pearl, James W. Nye, Adon Smith.

On Farms.—Lewis Raynor, Elijah Morse, Benjamin Enos.

On Horses, Stallions, matched and single.—Halsey Judd, J. Coan, Daniel A. Brainard.

On breeding mares and colts.—Edward W. Taylor, Daniel Scott, William Benjamin.

Sheep.—Curtis Hoppin, Bradley Merchant, John Potter.

Cattle, Durhams.—Ira S. Hitchcock, George B. Rowe, Asa R. Main.

Devons.—S. H. Church, H. Leland, John B. Coe.

Grades and natives.—Amzi S. Hungerford, William S. Palmer, Rufus S. Ransom.

Working oxen, and fat cattle.—J. D. Ledyard, jr., Cyrus R. Ackley, Sheffield Burdick.

Milch cows.—Sylvester Burchard, Elijah Morse, Orson T. Ladd.

Swine.—Sidney Spring, Stephen Hill, jr., E. Alesworth.

Field and root crops.—Committee of the whole, (at the next annual meeting.)

Dairy products.—John Williams, David Hess, A. Mott.

Domestic manufactures—Silk and factory goods.—W. Jerome Hough, John Hobbie, Thomas L. Cleveland, Henry Lewis, Mrs. Hough, Mrs. Hobbie, Mrs. Cleveland, Mrs. Lewis.

Discretionary Premiums.—Samuel L. Abbott, Lyman N. Root, Ledyard Lincklaen, Mrs. Gen. Nye, Mrs. Col. Birge, Mrs. Abbott, Mrs. Judge Mason.

Plowing match and farming utensils.—S. P. Chapman, Lewis Raynor, Orrin B. Lord.

THE FAIR.—The committee having in charge the special arrangement of the grounds, had, previous to the time appointed, enclosed a suitable piece of pasture ground, and provided a tent, under which the fruit, vegetables, dairy products, &c., were to be exhibited. The Methodist church was occupied below with the various articles of factory and domestic produce, works of taste and artistic excellence, and fruits, grapes, &c. The upper part of the church was devoted to the reception of visitors and friends, and all presented a spectacle of taste and refinement never surpassed at any previous fair in the county.

On the morning of the first of October, the clouds, which for several days had lowered above us, broke away, and a beautiful autumn day succeeded. The exhibitors of stock and produce, who had not the day before come into town, were seen passing on their way to the grounds, and at noon, every thing was entered, the books of entry closed, and delivered to the several committees. Only one farm was entered for a premium, that of Hiram P. Potter, East Hamilton, on lots 12 and 29; and the committee, from previous examination, regarded it as coming near to a model farm. The report of the committee, and Mr. Potter's statement, are here given.

Premium Farm of 1851.—Report of the committee on farms, Lewis Raynor, Benjamin Enos, Elijah Morse, *committee.*

The committee on farms report that one farm has been submitted for their examination by Mr. Hiram P. Potter, of East Hamilton. The farm of Mr. Potter is situated in a valley at an elevation of about thirty feet above the stream, on a level terrace or platform of land naturally of excellent quality. It was brought by its former owner, Mr. James H. Dunbar, to a high state of cultivation, and has been still further improved by its present owner and occupant. The buildings are well adapted to their purposes, and in good repair. The fences are in great part cedar post and rail, and in good repair. The fields, seventeen in number, are all surveyed by compass; their areas, character, and relative position, laid down on a map, and a number affixed to each by which it is known, and referred to on Mr Potter's account book. In these books, accounts are kept, with every field and every crop, in such a manner as to show precisely the profit or loss belonging to each, so that all the operations of the farm are carried on with the regularity and system of a manufacturing business. The farm is naturally destitute of water except on one side, and there the stream being at the bottom of a high bank, is not conveniently accessible Advantage has been taken of a spring having a fall of about three feet, in which have been placed two small *hydraulic rams*, which raise the water thirty feet or more, in quantity sufficient to supply not only the house and barn, but all the fields, as may be required for the pasturage of stock. Mr. Potter has at present, but few cattle; these are either Durhams or grades, and of excellent quality; one pair of two year old steers, having taken premiums in this society both as calves and yearlings, have now attained the great weight of thirty-three hundred pounds. The statement of Mr. Potter, herewith submitted, is so full that little more need be said with reference to his farm or crops. The committee are of opinion, that they exhibit a degree of excellence in farming, well deserving the first premium, which they award to Mr. Potter accordingly.

Mr. Potter's Statement.

To Lewis Raynor, Benjamin Enos, Elijah Morse: Gentlemen: In reply to the questions proposed by the Madison county Agricultural Society to the competitor for the premium for the best cultivated farm, the following answers are respectfully submitted: My farm contains 75 acres; 65 are under cultivation, and the remainder wood land; this is the fourth year that I have occupied it. The usual depth of plowing is from 9 to 10 inches. I have used the Michigan sub-soil plow with good results. The manure is made from the hay and straw grown on the farm. With the straw the cattle yards are kept constantly littered, and it is freely used as bedding in the horse, cow and ox stables. The barn yard is arranged so as to retain, as much as possible, the urine and water of the yard. Also, reservoirs are in the stables, filled with charcoal dust, for saving the urine. I also feed from 8 to 10 steers, in winter; I feed the greater part of the grain I raise to my stock; make from 125 to 175 load of fine or short manure annually; pile the manure from the yard in May, turn it in July, and in the fall it is nicely rotted for use; apply to hops, teasels and hoed crops from 20 to 25 loads per acre. I sow in the spring on my meadows and pastures, two bushels of plaster to the acre; have never received much benefit from lime; my average number of stock, for the year, is about 20 head of cattle, 4 horses, 7 sheep, and 5 hogs.

Grass lands. Clover and Timothy are the grasses grown on this farm, from 14 to18 quarts per acre, are sown, in the spring; usually seed after barley; I have cut, this year, from 24 acres, 61 tons of hay.

Rotation of crops on three years courses. Plow green sward in fall; plant corn from the 10th to the 20th of May; second year, oats; third year, barley and seed down; have used leached ashes with good results, from 60 to 100 load of which are annually applied to meadows.

Tillage Crops, this year, are 3 acres of corn, 6 of oats, 5 of barley, 5 of hops, 2½ of teasels, ¾ potatoes, ⅛ beans, ⅛ carrots, 1 of sowed the Labrador the 18th of April. All the farming operations are conducted with as much accuracy as possible. All the crops are measured and weighed, and the results carefully recorded, a journal is kept of each days' work in which the labor performed by every man is recorded; and in a book, kept for the purpose, is noted the number of days work bestowed on each field, with the expenses for labor, the product from the crop, and the profit or loss from the same. (For an account of Mr. Potter's crops, see accounts in a previous part of the report, on profits of farming.) My books are kept in such a manner, that the expenses of the farm and the income from it can readily be seen, and an accurate balance of debt and credit can be made at any time. This system I consider not only *necessary* to an economical management of the farm, but highly satisfactory to the farmer, and will, in my opinion, amply repay for the time and labor it requires.

I have adopted the following form for making daily memoranda, the lots in my place all being numbered.

1851.	MEN'S WORK.	HORSES WORK.		WEATHER.	THERMOMETER.			BAROMETER.	REMARKS.
			Hours.		Sun rise.	12 M.	Sun set.		
January 18,	To ½ day thrashing oats, No 17,	Road.	2	Fair.	4	12	10	29 5-10	Cleaned up 32 bushels oats from No
	½ day cleaning up oats, No. 17,								
May 14,	To 2 days planting corn, No. 6,			Fair.	36	60	50	29 8 10	Commenced planting corn.
July 14,	To 4 days making hay, No. 16,	½ day farm.	3	Fair.	58	78	70	29 4-10	Drawed 6 loads of hay from No. 16. in barn 9,600 cwt.
August 28,	To ½ day odd jobs,								
	½ day repairing hop boxes,	½ day farm.	2	Fair.					
	1 day drawing gravel in lane,			Light frost.	32	74	50	29 8-10	

In the class of horses, beside those to which premiums were awarded, was a number of all ages, making a splendid show of fine animals. The "Highlanders," and "Kentucky Hunters," and more recently the "Morgan Horse," have done much for Madison county, by way of introducing a fine and serviceable class of horses.

The "fleecy tribe" were well represented by a number of "pens," some of which, for fineness of wool, others for symmetry of form and bulk, and others again for weight of fleece, place this county high in the scale of excellence. But, perhaps, the most attractive class in the exhibition for numbers, variety, and superior excellence, were neat cattle. The Grades, Devons and Short-horns, vied with each other for admirers, and many there were of noble specimens in competition. Two extraordinary specimens of grades, challenged special admiration.

One, *a yearling* bull, out of the old Grant bull, well known in this and Oneida county. He was admired for his clean and perfect form, and his dark red color; while his weight, 1,336 lbs., was almost incredible. The other a yoke of two year old steers, exhibited by H. P. Potter, without any known pedigree, out of the Ackley bull and native cows; they weighed together, about 3,600 lbs. These specimens, and others, from that region place, East Hamilton, almost beyond competition in the line of Natives and Grades.

Two herds of Devons, both from Hamilton, owned respectively by John Muir, Sen., and David Osgood, were well represented; these herds have been bred from the purest and best blood, and together with a few other samples, offered a spirited competition, each herd bearing away a portion of the premiums given to that class.

The Short-horns found less competition, since the *pure blood* is confined almost exclusively to one herd; yet our citizen, S. P. Chapman, though so fortunate as to own the premium Short-horns of the State, did not succeed in bearing away *all* the premiums, showing that other herds of these fine animals are being established in our borders, that make no unworthy pretensions to excellence. Mr. Alpheus Morse's show of cattle, contained many well bred animals of the Short-horn grade, and a few of "Herd Book" notoriety. But among all this exhibition of fine cattle, the premium list will be a guide to the best individuals in each class. The show of cattle was a grand one; yet there were many *good* cattle that should have been there, left at home. It is so easy for a man to come by degrees to the conclusion, that *his* cattle are nearly or quite as good as can be produced; that if a person has a good animal, he should not fail to present it at the fair, for here, by actual comparison with the *best*, he *may be* undeceived if he is mistaken, while on the contrary, if he is so fortunate as to possess a superior animal, he may thus come in possession of a certain consciousness, and record that his well directed efforts have been crowned with success, and be encouraged to continue his labors.

The show of milch cows was small. This department of breeding is much neglected; upon no branch of industry more than the dairy, does the prosperity of this county depend. There should be a sufficient premium offered upon cows producing the greatest amount of butter and of cheese, for a stated time during the season, say ten days in June and ten days in August, requiring a statement of the amount of milk given during the time of trial, and the richness of the milk, or the number of pounds requisite to make a pound of butter or cheese. This premium should be upon the cows; all or a part of the dairy to be exhibited at the fair, accompanied by the prescribed statements, and not upon the butter or cheese produced. It gives much trouble and labor to conduct the experiments necessary to determine the specified particulars, hence a premium should be offered that would in itself be an inducement to make the experiments. These are points so important to be known, that the society could well afford to divert the premiums from other objects, at least for a time, that public attention might be called directly to the quality as well as quantity of the milk produced by cows of various breeds.

The show of butter was good, and the specimens of a very creditable character. That of cheese, however, though quite as large, was not remarkable for its quality.

Of Fruits.—There was a fine display, especially of winter apples. Perhaps there is no better climate or soil for the production of fine apples, than the uplands of Madison county. The finer fruits, however, require much care to bring the tree successfully through the winter, and the fruit to perfection in the fall. Yet the most delicate and delicious varieties can be raised here, as evinced by the samples of peaches presented by Mr. S. D. Redfield, of Cazenovia, equal in every respect, size, perfection and flavor, to the finest specimens of this fruit raised in New-Jersey. When that attention is given to horticulture, which its importance demands, almost every family in the county may be supplied with the best varieties of fruit. It is only recently that the society has been in a condition to encourage the exhibition of fruit, and it is a source of congratulation that its good effects are so soon manifest.

Samples of silk in its various stages, from the cocoon to the beautifully dyed thread, were exhibited; showing that when this branch of domestic industry receives proper support and attention, none of the elements are wanting either in our soil or citizens, to warrant a profitable and extensive business.

The *factory* and *domestic goods* exhibited in the church, were of the first order in their class. The many beautiful quilts and counterpanes caused one to grow warm, with admiration, and will, no doubt, shield many a subject from the rigors of winter's frost in the hours of unconscious repose. The many articles of domestic fabrication evinced a degree of skill, taste and industry, creditable to the ladies who so liberally contributed to the exhibition in this department.

The forenoon of the second day was devoted to the *plowing match*, which displayed more skill both in guiding the team and plow, and in the structure of the plows, than has been usual in this county. P. Auld's *plows* from New-Hartford, were objects of general observation and admiration among the spectators. Discretionary premiums to the amount of about $100, were awarded to articles not on the general list, thus encouraging inventive genius and the display of a versatility of talent, the development of which is so necessary to the true progress of improvement.

The afternoon of the last day was devoted to the address delivered before the society by Prof. S. B. Woolworth, of Cortland academy, who, from the interest he has so long felt in the improvement of agriculture by the application to it, of the principles of science was eminently qualified both to interest and instruct his audience; and the interest manifested in the address by all, showed that there is a growing desire to understand these principles and their application. After the conclusion of the address, the award of premiums by the several committees were announced by the recording secretary, Col. C. D. Miller. The list of the awards was published in the papers of the county.

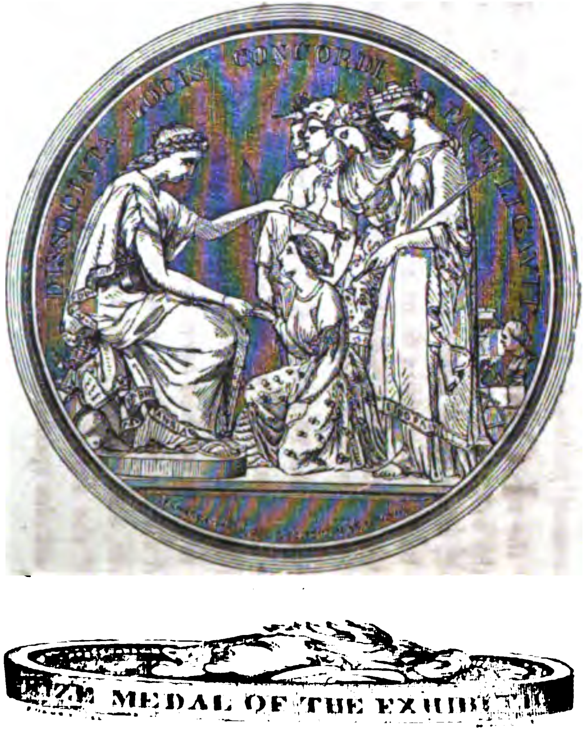
Town Societies.—For several years past, a well organized town agricultural society has existed in Stockbridge, holding annual exhibitions of stock and farm produce; and its influence upon the improvement of the town is most beneficial.

In eighteen hundred and fifty a town agricultural society was organized in Brookfield, and two annual fairs have been held. The society has also purchased and paid for a tent, under which the domestic articles and fruit were exhibited the past season; and the show, in all its departments, was creditable to the town, notwithstanding the constant rain that poured down the whole day.

An association of farmers and mechanics was formed in DeRuyter, in the winter of 1847-8, a room fitted up, and a circulating library of about sixty-five valuable volumes established; since then, meetings for discussing questions of interest to the farmer and mechanic, and of listening to lectures, have been occasionally held, and the library has many readers and applicants for information. Societies of this nature, if properly organized, can exert a saltary influence upon the community sustaining them, and offer to the public sources of amusement and improvement during the long evenings of winter, and the leisure hours of every season of the year.

APPENDIX.

APPENDIX.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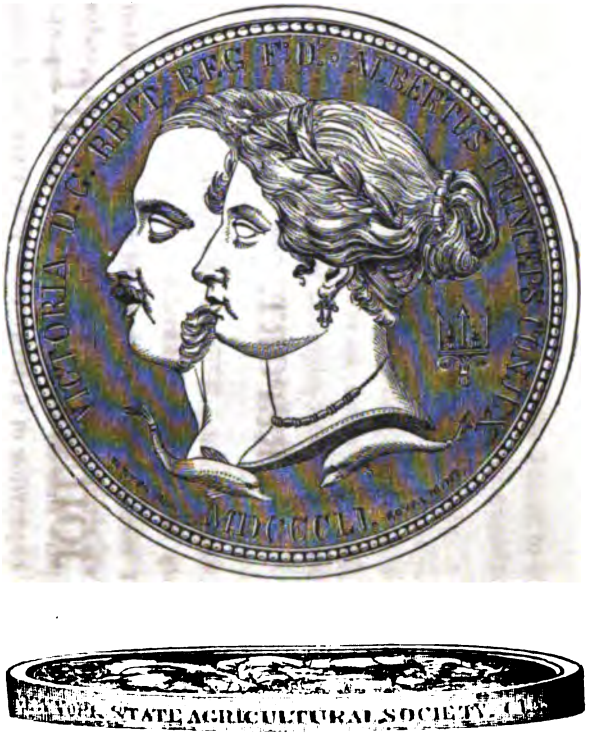
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MR. JOHNSON'S REPOR

TO

HIS EXCELLENCY GOV. H

ON THE GREAT EXHIBITION,

LONDON.

REPORT.

To His Excellency **Washington Hunt.**

Sir—When I received the appointment as agent of the State, to attend the Exhibition of the Industry of all Nations in London, I did not anticipate that an extended report would be expected from me. The expression of a desire from your Excellency since my return, has led to the preparation of the accompanying report.

During the Exhibition, I took notes of such portions of it as to me appeared of special interest, and gave particular attention to those departments which seemed to have a practical bearing upon the interests of this country, and which appeared to be most useful and important.

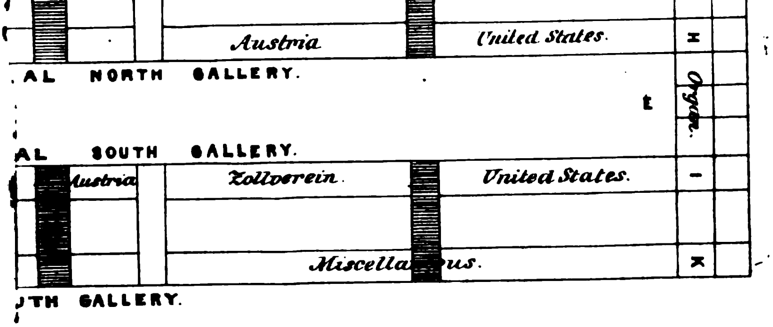
In preparing the report, I have availed myself of the descriptions given by the exhibitors themselves of the articles which are specially noticed, when these could be obtained, and when these were not to be had, I have given from my own notes and recollection, such notice of them as I trust will render them intelligible.

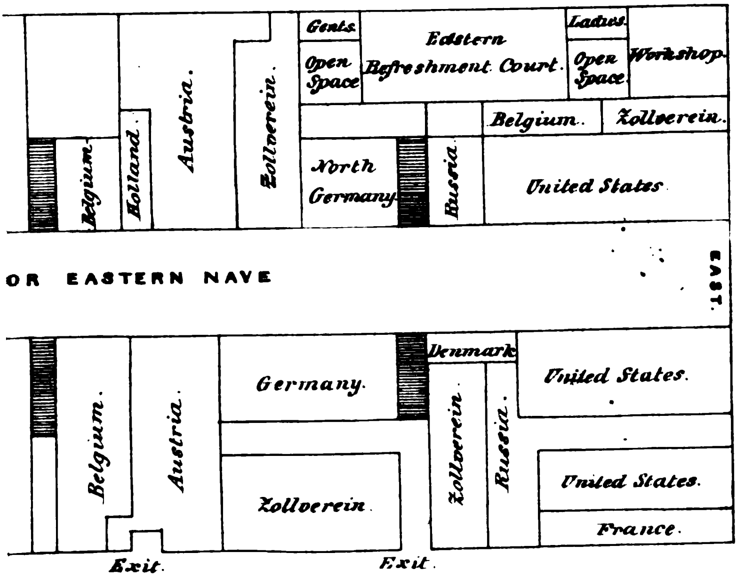
I left New-York on the 16th of April last, in the steamer Baltic, and arrived at London the day previous to the opening of the Exhibition, and as soon as the Exhibition was opened, I took the charge of such articles as had been specially committed to my supervision, and all the attention in my power was given to their proper exhibition, and in every case these articles were brought to the notice of the Jurors, and received due examination. In addition to the articles specially committed to my care, I deemed it my duty to call the attention of the Jurors to all the contributions from this State, so that a proper examination might be secured.

The importance of this Exhibition, in which so much interest has been manifested by almost every nation of the world, will justify a brief history of its origin, rise and progress, in connection with remarks upon the exhibition itself.

ORIGIN OF THE EXHIBITION.

Its origin may probably be traced to one held in France in 1844, somewhat similar in its character. Since that period, the subject of a National Exhibition in London, had excited much attention in Great Britain, and was frequently brought before the Society of Arts, of which his Royal Highness, Prince Albert, was the President, in 1845, and, it is mainly due to his exertions and influence that it was finally resolved upon. In order to carry out the objects of the exhibition, a Royal commission was formed, and funds to a considerable amount were raised by voluntary subscription, to aid in defraying the necessary expenses. After a large number of designs for the building in which the proposed exhibition was to be held, had been prepared and submitted to the Commission, and a plan for the building had been agreed upon, Mr. Joseph Paxton, submitted a new plan for a structure to be composed mainly of iron and glass, which was accepted, and a contract was entered into by Messrs. Fox and Henderson, on the 26th of July, 1850, to have the building completed and ready for opening to the public by the first day of May, 1851. Some faint idea of the magnitude of the work may be formed from the dimensions of the building.





Rich.d & H Pease Lith. Albany

UNIV. OF

Its entire length was	1,850	feet.
Width of nave and aisles,	450	"
Width of transept,	72	"
Length of do.	408	"
Height of do.	110	"
Height of nave,	64	"
Width of do.	72	"
Width of side aisle, 1st division,	48	"
" " 2nd do.	24	"
Height of the 1st division,	43	"
" 2nd do.	23	"

Total area, 18 acres or 772,784 square feet.
Total area of galleries, 217,100 "
Total cubic contents of building 33,000,000 feet.

Among the immense variety of objects of interest, which were presented from the various nations of the world, of which there were many of unsurpassed splendor, the palace itself was an object that attracted first of all, the attention of every visitor. It was a striking exhibition of the extensive resources of the British Empire, and was alike creditable to the designer, and to the contractors and artisans, who aided in its erection. It was completed in about seven months, the first column of the building having been erected on the 26th day of September, 1850. Its adaption to the objects of the exhibition was most perfect, and the arrangement of its contents was made with great facility, and showed to much advantage, and its size was found to be fully adequate to the arranging of the entire exhibition; and yet the building was in the main fully occupied. It is to be hoped, that it may be permitted to remain, not only as a memorial of the exhibition itself, but of the talent of the designer, the extraordinary tact of the contractors, and of the extensive resources of the country, which in so short a time could produce complete such a structure. A diagram of the interior of the building is annexed, showing the ground floor and the galleries, and the portions occupied by the respective countries that exhibited articles.

It has been well said, "it is impossible to enumerate the many and lasting benefits which must result from this great Great Exhibition, when carried to its full development. It will ever be referred to, as the most stupendous conception of modern times, when the conviction has practically prevailed, for the first time in the world's history, that nations do not profit by each others losses, but that they grow to be great and thriving by each others prosperity, or in other words, that each individual portion is interested in the general prosperity."

The number of exhibitors was about 17,000, of which nearly one-half were British, including the colonies and dependencies of Great Britain. The number of exhibitors from the United States entered upon the catalogue was 599. The British productions were arranged in the western half of the building, and those of foreign countries in the eastern. The exhibition was divided into four great classes: 1st, *Raw Materials;* 2nd, *Machinery;* 3d, *Manufactures;* 4th, *Sculpture and the Fine Arts.* In the location of the respective countries, a division was made according to the geographical position of the countries represented; those which were in the warm latitudes being placed in the center of building, and the colder countries in the extremities.

OPENING OF THE EXHIBITION.

The building was formally opened to the public on the first day of May, by Her Majesty Queen Victoria, with suitable and very imposing ceremonies.

Her Majesty, Prince Albert, the Prince of Wales, and Princess Charlotte, and the members of the court, proceeded from Buckingham Palace to the great building in Hyde Park, arriving there precisely at twelve. The only special preparation for the ceremony, was a carpeted platform and a chair of State, placed beneath a canopy, suspended midway in the transept of the Palace. As the Royal procession advanced, the mighty organ and the choir gave the national anthem. Prince Albert, at the head of the Royal Commissioners, next read to Her Majesty the Report of the undertaking, and the choir sung the Hallelujah Chorus.

A Royal procession was then formed, headed by Mr. Paxton, and Messrs. Fox and Henderson, followed by the official persons of the Exhibition, Foreign Commissioners, Foreign Ambassadors, Prince Albert and the Queen, with their attendants, and the members of the Court. The procession made the circuit of the nave of the building, which was filled with the visitors—the organs in different parts of the immense structure, successively playing at the Queen's approach.

On her Majesty's return to the platform, the Queen declared "The Exhibition opened," which was announced by the firing of a Royal Salute on the banks of the Serpentine, near the Palace, and Her Majesty, the Prince, and their attendants left the building, and returned to Buckingham Palace.

The exhibition thus opened, was no longer a private undertaking, but identified with the history of the world—and it is to be hoped that the expectation of Prince Albert, will by the blessing of Divine Providence, be realized. He remarked, "the first impression which the view of this vast collection will produce will be that of deep thankfulnesss to the Almighty for the blessings which he has bestowed upon us already here below! And the second, the conviction that these can only be realized in proportion to the help which we are prepared to render to each other—and therefore, only by peace, love and ready assistance, not only between individuals, but between the nations of the earth."

Soon after the opening of the Exhibition, the arrangement of the jurors who were to pass upon the varied contents of the palace was completed. There were thirty classes of jurors, and three sub-juries, one subordinate to class No. 5, and two subordinates to class No. 10. A chairman and deputy chairman were appointed for each jury, and a reporter. The chairmen of the juries, thirty-two in number, composed what was called the Council of Chairmen—to whom all the awards and recommendations of the juries had to be submitted for final action. The duties of the council of chairmen—composed of nearly an equal number of British subjects and foreigners, there being 17 British and 15 foreigners—were to determine the conditions upon which, in accordance with certain general principles previously laid down by the Commissioners, the different prizes should be awarded—to frame rules to guide the working of the juries, and to secure as far as practicable, uniformity in the result of their proceedings.

The Juries were also divided into groups—the first division, *Raw materials*, was composed of *Four* Juries. The second, *Machinery*, of *Seven*. The third *Textile Fabrics* of *Ten*. The fourth, *Miscellaneous Manufactures*, of *Nine*. Before a jury could finally make its awards, they had to be submitted to the group of Jurors, and receive their favorable consideration. The group had power to confirm the awards or otherwise, and to investigate any disputed decision. Before the awards were finally disposed of, they were submitted to the council of chairmen—whose duty it was to see that the regulations had been complied with. In many cases the decisions of separate jurors were overruled by the vote of the group, and in not a few instances, the decisions of the group in recommending a council medal, was reversed by the council of chairmen.

The Commissioners had expressed themselves desirous that merit should be rewarded wherever it presented itself, but anxious to avoid recognition of competition between individual exhibitors, they had decided that the prizes should consist of three medals of different sizes—and that these should be awarded, not as first, second, and third in degree, for the same class of subjects and merit, but as marking merit of different kinds and character. The council of chairmen found that it would be impossible to lay down any rules for the awarding of the three medals, by which the appearance at least in denoting different degrees of success among exhibitors of the same branch of production, could be avoided. They requested

The *Prize medal*, or the second in size, should be conferred whenever a certain standard of excellence in production of workmanship had been attained—utility, cheapness, adaptation to particular markets, and other elements of merit being taken into consideration, according to the nature of the object; and this medal was to be awarded by the Juries, subject to confirmation by the groups. As it regarded the *Larger Medal*, the conditions of the award required, were "some important novelty of invention, or application, either in material, or process of manufacture, or originality combined with great beauty of design; but that it should not be conferred for excellence of production or workmanship alone, however eminent; and it was further suggested that this medal should be awarded by the council of chairmen, on the recommendation of a Jury supported by its group." These were the general principles by which the Juries were to be governed—but they did not give entire satisfaction—and in carrying them out instances occurred in which they were not in all respects fully complied with. This was scarcely to be avoided, in some instances, where the lines between the larger medal and the prize medal came very near each other. As a substitute for the third medal, the jurors were authorised to make *Honorable Mention* of such articles as were deemed worthy of special notice, though not possessing the standard of excellence required for the Prize Medal.

Each Jury was superintended by a chairman, appointed by the Commissioners, from the Jury, and a deputy chairman and reporter selected by the Jurors themselves. Each group of Juries received the assistance of a deputy commissioner and of a special commissioner to record the proceedings, to furnish information respecting the arrangements of the exhibition, and otherwise to facilitate the labors of the Juries composing the group. The separate Juries also kept a record of all their proceedings. The Juries were instructed to award prizes without reference to the country of the exhibitors, the exhibition being considered, in this respect, as recognizing *no distinction of nations*. The number this country unrepresented on nine of the Juries and sub-Juries.

It will be perceived from this brief history of the arrangements made for the examination of the articles exhibited, that much care was exercised by the Commissioners, in order to secure a complete examination of the great variety of articles on exhibition. The requirements for a review of the decision of the separate juries by their respective groups, and those of the groups by the council of chairmen, were calculated to bring under review the various articles exhibited from the different nations represented. It would be too much to say, that no articles were overlooked, but I think I am justified in saying, that there were comparatively very few articles but what received an examination.

As regards the exhibition from the United States, every effort was made to bring each article under the supervision of the Jurors. Mr. Dodge, while the acting commissioner, addressed a request to each Jury in relation to the articles before them, and I did the same in respect to the articles from this State, and was assured by some member of each of the respective Juries, that the articles had been examined.

I deem it due to the gentlemen comprising the Juries, who were generally selected by their respective governments, or authorized representatives with much care, and who were men of standing in their respective countries, to state, that an earnest desire was manifested to do justice to the exhibitors. The English Jurors, who composed at least one-half of the whole number, were selected with reference to the class of articles upon which they were to pass, as being conversant with them, and they certainly evinced, so far as I had the opportunity of ascertaining, a desire and readiness to examine carefully the contributions before them, and to ascertain the facts in each case, and they yielded to evidence in relation to the merits of articles examined, where evidence was given, with a manliness that certainly did them great credit. Having had an opportunity, not only as a Juror upon an important class, "Agricultural Implements and Machinery," but also as having been called before most of the other classes of Jurors, when they examined the articles in the United States Department, I think I can speak from opportunities of observation, that gave me facilities certainly equal to others for ascertaining the manner in which the Jurors discharged their important and very onerous and perplexing duties. I have considered it proper to make these remarks, because it had been suggested that there was great danger to be apprehended in reference to the awards; and since the awards have been announced, many complaints have been made, as appears from the Foreign Journals. Whatever ground of complaint there may be in regard to the articles in the British department, of which I am not competent to form an opinion—so far as this country is concerned, although articles have been omitted, which in my opinion and in that of others of the Jurors from this country, should have received prizes, and some in a higher class than they did receive; still, I think it will be found, that as a whole, the awards, to this country, are in the highest degree creditable to our exhibitors, considering the circumstances under which the articles from this country were prepared.

It should be borne in mind that the exhibitors from this country were placed in a very different position from any other foreign country. The exhibition from the United States was made by the exhibitors themselves, *without aid or assistance*, in their preparation, from the government, and although many have complained of this want of apparent interest on the part of the government in the objects of the exhibition, it is not by any means certain but that the influence of our exhibition has been far better upon the world, has more powerfully demonstrated the peculiar advantages of our free institutions, in the development of the energies of the people, than could have been done if the government had made a large appropriation for the purpose of preparing articles specially for the exhibition. Our exhibition was made by our citizens themselves, and showed their enterprize, their energy, their skill and ingenuity; and when this was known, it was a matter of surprise to foreigners that we exhibited as much as we did. The character of our articles were such as to show to the world that we worked for the great masses, not for the luxurious and privileged few.

In articles of utility and comfort, and for the advantage of the middling classes, who are the great producers of the world, as distinguished from the nobility and gentry, there was a very marked difference between the exhibition of our citizens and all the other countries. An English writer, in speaking of the difference between their contributions and those of continental nations, says: "In those productions that imply what would here be considered, and truly so, a waste of labor, the utility of the article bearing no proportion whatever to the time spent upon it, and which only shows the degradation of the countries in which they are produced, as indicating at once the almost senseless luxuriousness of the rich, who must be the purchasers, and the starvation wages which the citizens must be brought to before such articles could be produced at all; in these productions we are unquestionably surpassed."

These remarks apply with much more justice to the exhibition from this country, as compared with the continental and eastern exhibitors, and with a very considerable portion of the English exhibition also. There was nothing from this country to compete with those splendid articles, designed only to minister to human pride, which composed so large a portion of the exhibition; as an American I rejoiced that this was so; and it will be, in my opinion, a sad day for our country when articles of this character shall attain a *preëminence* here, over the useful and necessary, as they do in the Old World. The condition of the laboring classes who perform the work is far different from that of our own population, and I trust the day may never arrive when we shall substitute for the intelligent, free and virtuous population of our country, the ignorant, vicious and degraded operatives of the countries across the Atlantic.

Our exhibition was designed to show, as it did, that in this country "genius, industry and energy find no barriers to their career." The number of inventions exhibited which were calculated to reduce the cost of production in agriculture, manufactures and the mechanic arts, was in the highest degree creditable to us, and elicited from distinguished sources in Great Britain the admission that to "the department of American 'notions'" they owed "the most important contributions to their industrial system," and after the exhibition was closed, and its advantages to the English nation were being summed up, the following admission, in regard to our contribution, was made in their leading journal: "Great Britain has received more useful ideas, and more ingenious inventions from the United States, through the exhibition, than from all other sources.

What higher tribute could be paid to the character of our articles, as claimed by those who knew and appreciated their value, than this—especially from the admission, that "*more useful ideas*" were received through us than from all other sources. Thus showing what every unprejudiced mind must, we think, admit—the great advantages which our free and liberal institutions afford for the development of the powers of the human mind.

In the early part of the Exhibition, the U. S. Department was the subject of much invidious remark, and our contributions were considered as far behind the times. Located in the buildings as we were, adjacent to France, Russia and Austria, there was indeed a striking difference in the appearance of the contributions from the different countries. While that from the United States was mainly of a character of utility in the Implement and Machinery department, and of the productions of the soil, the others consisted of the most costly articles, wrought with exquisite taste, silks, statuary, diamonds, jewelry, &c., which attracted the eye and called forth the warmest encomiums. During the first three weeks, while the admissions comprised only the wealthy classes, the United States Department was hastily passed over—a glance given, an inquiry made at the implements, a remark occasionally, "These may do for a new country, but would not answer in England—unless *our* mechanics have the altering of them, &c.," was the principal notice which was given them. In answer to these remarks upon our implements—the reply was frequently given that no "*English mechanic*" would have the privilege of practising upon our implements, until they were tried, and we had the opportunity of showing what our implements could perform. It was not a very pleasant position, to be met with remarks similar to these, day after day for several weeks. As the jurors, however, began to make their examinations, and as exhibitors and others interested in the articles on exhibition were called upon to explain to intelligent and practical men, what were the properties claimed for our articles, more interest was manifested in our department.

AWARDS.

The whole number of Awards, Council and Prize medals, and Honorable Mentions was 5,084—of which the United Kingdom received 2,039; Foreign countries, 2,896; the United States, 159.

	British.	Foreign.	U. S.	Total.	
RAW MATERIALS—Classes 1 to 4.					
Council Medals,	6	15	1	22	
Prize Medals,	125	399	38	562	
Honorable Mentions,	131	510	25	666	1,250
MACHINES, IMPLEMENTS, &c.—Classes 5 to 10.					
Council Medals,	52	33	3	88	
Prize Medals,	301	166	25	492	
Honorable Mentions,	51	105	9	165	745
TEXTILE FABRICS.—Classes 11 to 20.					
Council Medals,	1	2	0	3	
Prize Medals,	337	483	15	835	
Honorable Mentions,	185	265	12	462	1,300
METALLIC AND VITREOUS MANUFACTURES.—Classes 21 to 25.					
Council Medals,	14	20	1	35	
Prize Medals,	312	202	12	526	
Honorable Mentions,	208	197	2	407	968

	British.	Foreign.	U. S.	Total.	
Council Medals,...........	4	9	1	14	
Prize Medals,..............	142	221	11	374	
Honorable Mention,........	100	151	3	254	642
Fine Arts.—Class 3d.					
Council Medals,...........	2	2	0	4	
Prize Medals,..............	27	59	1	87	
Honorable Mention,........	41	47	0	88	179
					5084

The number of exhibitors in the U. S. Department was 599; prizes 159—being a fraction over one to every four, while in the United Kingdom the No. of exhibitors was about 9,086—prizes 2,039, or one to every 4½ exhibitors. We have, in this, an evidence of the attention which was given by the Jurors to the articles on exhibition from this country, as well as an appreciation of their merit.

The number of Medals and Honorable Mentions which were awarded to exhibitors from this State was forty-four. A list of the articles, which were accepted by the local committee of this State, and approved by the central authority at Washington, accompanies this report.

EXHIBITION.

In my remarks upon the various departments of the exhibition, my limits will only allow me to give a rapid, and very brief sketch, even of those articles that appear to me worthy of special notice. I shall, of course, pass by many, that to others may have appeared of more importance than those to which I may allude. I shall take up the various classes in the order in which they were awarded by the Juries. In the order of the Commissioners, the first department (A) was Raw Materials, divided into four classes

1st. Mining, &c., and Mineral products.
2d. Chemical and Pharmaceutical products.
3d. Substances used as Food.
4th. Vegetable and animal substances chiefly used as manufactures, as Implements, or for Ornaments.

Of the first of these classes, mining and mineral products, the exhibition from Great Britain, was of the highest interest, probably as perfect as any department of the exhibition, and far exceeded, in extent, the contributions from all the other countries. The annual value of the mineral products of Great Britain alone, is said to be, at this time, "independently of the cost of coinage or any manufacturing process, not less than twenty-five millions sterling;" nearly 125,000,000 dollars. The most important of the mineral products of this country is coal.

There are eleven principal coal fields in Great Britain, containing an area of 12,000 square miles—producing, annually, 32,000,000 tons, valued, at the place of consumption, at 18,000,000 sterling, equal to about 88,000,000 of dollars. Of these various deposits, there were samples exhibited, many of them of immense size. Models of several mines were exhibited, with the machinery for working and raising the coal, illustrating, fully, the whole process.

Coal was exhibited from Belgium, France, New Brunswick, India, New South Wales, New Zealand, Nova Scotia, Portugal, Spain, United States, Van Diemans Land, Zollverein. There was but a small exhibition from the United States. From Pennsylvania very fine samples of anthracite were shown, and several specimens of bitumenous coal.

	Square miles.
British Islands,	12,000
France,	2,000
Belgium,	520
Spain,	4,000
Prussia,	1,200
Bohemia,	1,000
United States,	113,000
British North America,	18,000

It will be seen from the above statement, that the deposit of coal in this country far exceeds that of the residue of the world, so far as discoveries have been made. That in these coal formations a mine of wealth to our country is contained, is obvious to the most casual observer.

Much of the machinery on exhibition in this class, was worthy of careful study by those in our country interested in the mining of coal. Among the most valuable of the inventions in this class, was one for washing and purifying coals, by Berard & Co., of France, to which a Council Medal was awarded. It would be interesting to dwell on this subject, but the limits of this report forbid it.

There was a large display of lead ores, and lead in various stages of preparation, with the machinery in use at the mines to carry on the various operations, until it is prepared for market. There was but one sample exhibited from the United States, which was from Missouri.

A very large share of the exhibitors in this division were from Great Britain. And among them, the Duke of Buccleugh was the largest, whose models of machinery for separating pure silver from the lead ore was very complete.

Of iron ore and preparations from ore, there was a large display from various countries. From the United States there were a number of samples both of ores and iron and steel. Those from the Essex county mine, in our own State, were very superior. Samples exhibited by A. J. Rousseau, of Troy, were remarkably fine. A Prize medal was awarded to the Adirondack Manufacturing Co. of this State, for steel and iron, manufactured from the Essex ore. This company had on exhibition some excellent specimens of their manufacture, which attracted much attention. The ore of this company has peculiar and valuable qualities for the production of iron. The adaptation of the bar iron, for making cast steel, is ascertained to be equal to any, not excepting the celebrated brand of Swedish iron. Cast steel, of a quality decidedly superior to any other now in use, and better than that from the bar iron, made from the same metal, can, it is stated, be produced from the pig metal direct, by a simple process, costing only a small amount per ton more to bring into the state of "*blister steel*," than it costs to bring bar iron into that state.

The show of Gold and Silver ore was not very extensive. Two exhibitions from the United States, one from Virginia and the other from California. In the English departments, some very choice specimens of California gold were exhibited.

SWEDEN.—Some of the celebrated steel iron, and tough iron from Sweden was exhibited, and the magnetic ores from which it was made. Its peculiar properties are attributed to the ore and the manner of its manufacture, by the use of charcoal and wood in the smelting process.

Copper ore was exhibited, very largely from Great Britain. Several exhibitors from Spain. From the United States, a mass of native copper, the largest in the exhibition, weighing 2,544 lbs., from the N. W. Mine of Lake Superior, was shown by Dr. Feutchwanger, N. Y.

The exhibition of Tin was not very extensive; LeRoy & Co., of New-York, sent over quite late in the season, and after the Jurors had completed their awards, so that it could not receive notice from them; a sample of tin pipe in continuous length, produced by hydraulic pressure. This is believed to have been its first successful application to this metal. The cost is such as to render their general introduction practicable. It is said to be much superior to lead pipe; stronger, lighter, less likely to get bruised, and will preserve the water and other fluids much purer. This attracted very marked notice among mechanics, and it is undoubtedly a very valuable invention, and one that will prove of great service.

A gentleman from Scotland, very extensively engaged in the manufacture of lead pipes, examined them with great care and informed me that this was a desideratum in the manufacture of tin pipes, which he had endeavored for years to accomplish but without success.

There was a very extensive display of minerals and mineral ores exhibited; Great Britain, Austria, Spain and the Zollverein being much the largest contributors.

Gov. Collyer, of Alabama, forwarded a collection of minerals, made under his direction, illustrating the mineral wealth of that State. Dr. Feutchwanger, of New-York, had on exhibition a very large collection of minerals, including ore of iron, copper, zinc, lead, &c. The New Jersey Mining Company had a specimen of zinc ore, red-oxide of zinc, weighing 16,400 lbs., taken from a mine in Sussex county, New-Jersey, and it attracted much notice. The zinc ore occurs in white crystalline or altered lime-stone; it is a regular formed vien or stratum, with an inclination or dip of about 80 degrees, and is several feet thick at the surface or out crop. No estimate can be put upon the future value of this mine, as the ore is richer and purer than any known in the world; it is utterly inexhaustible, millions of tons of ore being in sight above water level, which, to be mined, require hardly any other means than quarrying.

The massive sample of this ore was got out accidentally in the ordinary course of mining, at a single blast, from near the surface, on the brow of the range of hills in which the vein out-crops. The mine was opened only last spring, and with a small force, nearly 3,000 tons of ore were got out and brought down to the works of the New Jersey Exploring and Mining Company, which are situated on tide water, a few miles from New-York. The Morris canal furnishes ready and cheap transportation for the ore generally; but being closed by ice last season before it was determined to send this large sample to the great exhibition, unusual means had to be adopted to get it to New-York, at an expense of about 1,000 dollars. No means of moving a mass of such immense weight being at hand at the mines, a truck of the largest size was sent for the purpose from New-York. The first attempt failed, from want of proper apparatus, and the truck returned. A second truck, fitted out completely for the service, was then dispatched, the company having determined to send this fine sample of ore to the exhibition at any cost. The task was one of greater difficulty than may be imagined, for within twenty miles from the mines three high ranges of mountains were to be crossed; it was midwinter and the roads were bad, and in some places quite precipitous. Heavy teams of horses and oxen were required to draw the truck up the mountains, and, in descending, it had to be held back by means of strong block and tackle rigging, fastened to the trees on the roadside. Being thus transported over the mountains a distance of twenty miles the ore reached the town of Dover, the terminus of the Morris and Essex railway, upon which it was brought to the city of New-York, a distance of 40 miles. Here it was again placed on the track and taken to the Navy Yard at Brooklyn where it was shipped on board the United States frigate St. Lawrence. Having been landed safely at Southampton, it was brought to London by rail, without charge, through the very liberal arrangements of the citizens of that town in regard to articles intended for exhibition from the United States.

It was a matter of great regret that a collection of minerals from this State, illustrating our whole system, was not exhibited. Inquiries were frequently made on the subject by distinguished foreigners who, having read the reports of our Geologists, felt a very great interest in examining a complete exhibition of the Geological formation of New-York, which is more perfect than any other portion of the world. An effort was made by the committee from this State to procure from the State Cabinet a collection for the purpose of exhibition, but as there were not duplicate specimens in the Cabinet to complete the series, it could not be done.

Of mineral paint there were two exhibitions from this State: W. Blake's, Ohio paint, and Mott's mineral paint from Lansingburgh. Blake's paint is in very extensive use in Great Britain and also upon the Continent; it is found to be very valuable for a first coat for coach painting and the sales are very large. The other variety has not been introduced there.

Class 2. *Chemical and Pharmaceutical products.*—The exhibition of this class was not large; France and the Zollverein having the largest number of exhibitors. There was only three from the United States. A Prize Medal was awarded to Power and Weightman, of Philadelphia, for some very superior chemical preparations.

Class 3. *Substances used for food.*—This was a very interesting and instructive department of the exhibition, in fact one that as much illustrated the importance and advantage of this great gathering of productions from all nations as any other portion of the exhibition. The substances presented in this class, familiar to every one, attracted the attention of the great mass of those who visited the exhibition. The advantages resulting from this bringing together the products of the world, can scarcely be over estimated. It was very interesting to trace the character of the various kinds of grain: wheat, oats, barley, &c., as they were affected by the climate and soil, and different circumstances under which each were grown, and it would be interesting to trace out these differences did the limits of this report permit.

The opportunity of exchanging products, which was very extensively embraced, and by which new varieties of grains and seeds will be introduced into all the countries represented at the exhibition, will result in great and permanent good.

I received from the French Department, through L. Vilmorin, of Paris, a collection of Wheats from Algeira, consisting of sixteen varieties, one of which was the indigenous grain of the country, which has the husks growing over nearly the whole of the head of the grain.

From J. deNottbect, Imperial Russian Commissioner, there have been received the following described grains:

1.	*Crop* of 1851.		Winter rye, from model farm, near Lipetzk, Province of Tamboff.
2.	1850.		Wheat, from Oural Steppes.
3.	1851.	do	called "Kolous" from Bessarabia.
4.	1851.	do	called "Bielotourka," from Noro-Russia.
5.	1851.		Buckwheat, from Province of Tchernigoff.
6.	1851.		Millet, from farm of Harkoff.
7.	1851.		Linseed, from Province of Pskoff.
8.	1851.		Rye, from Province of Olonetz.

From England some very choice winter wheat called "Chidham Wheat," same as exhibited by His Royal Highness, Prince Albert, grown upon the Royal farm, Windsor—and from Charlwood & Cummings, London, 47 varieties of grain and seeds have been received.

Samples of these grains will be distributed among our farmers for trial, and the results ascertained. Returns of grain and seeds have been made to France and will be to Russia.

A full collection was promised from Scotland, which will be received during the season. Samples of those received will be found at the Agricultural Rooms.

Samples of Macaroni and Italian pastes, and prepared flour, was exhibited, manufactured from the *hard-wheats*, which are best adapted to the manufacture, containing more gluten than the soft wheats.

Among the objects of instruction connected with this department, was an arrangement of agricultural soils, prepared Geologically from the tertiary to the primary formations, being the abrasions from rocks. In connection with these, were the minerals used as fertilizers, such as phosphate, sulphate, carbonate of lime, magnesia, alumina, &c., and specimens of grain grown; the result of an admixture of fertilizing earths, on some very poor lands, illustrative of the mineral collection. The products which had been secured by this judicious admixture of fertilizing earth upon this previously barren soil, was very remarkable, and it was a lesson to many an agriculturist who examined this collection, that impressed most deeply the importance of that intelligence which would enable the farmer to avail himself of the benefits which science confers upon this great interest of the world.

In connection with this subject, I would remark, that we have in this State one of the richest and most valuable deposits of Phosphate of Lime, which has as yet been found. It is at Crown Point, Essex Co. There are deposits in Essex county a few miles from the Lake, in connection with the Iron mines, that are very rich in the Phosphate, and which doubtless will be brought into market, whenever the demand is sufficient to cause the deposits to be opened and prepared for use. At this time, there is no preparation exciting more attention in England than the Phosphate of Lime. Its effects upon the Turnip crop, the great source of England's agricultural wealth, causes an immense demand for it, and arrangements have been made for the sale of the American Phosphate in England. A very natural inquiry from the use of it in England is, may it not become as advantageous to our own agriculture as to theirs? That it will prove so, I have no doubt, and I trust early efforts will be made to introduce it to the notice of our farmers. During the past season, several experiments have been made with it on Indian Corn, Cabbage, Melons, Tomatoes, &c., and with results as satisfactory as any that have been made in England. Having received a sample of our Phosphate during the exhibition, I presented it to the Duke of Richmond, President of the Royal Agricultural Society, with a request that it might be analyzed.

The correspondence and analysis are annexed:

Royal Agricultural Society, July 20th.

AMERICAN PHOSPHATE OF LIME.—The Duke of Richmond forwarded to the Council a specimen of American phosphate of lime, received from Mr. Johnson, along with the following letter:

No. 14, *Bury Street, St. James's, July* 9, 1851.

"I have the honor to present to your Grace, for the Royal Ag. Society, a sample of phosphate of lime, received by me by a late steamer from the United States. This specimen is from a deposit on the banks of Lake Champlain, in the town of Crown Point, Essex county, N. Y. The vein of pure phosphate is from two to eight feet wide; and a shaft has been sunk between twenty-five and thirty feet and the vein continues pure, and is a true vein, having its regular walls. It has been uncovered for several hundred feet, I understand, and there is an abundant supply for all time to come. It has been analyzed in the United States, and contains, I am informed, from 80 to 90 per cent. of phosphate of lime. It is found in a trap-dyke formation, which contains a portion of iron and alumina. It has been applied to crops in the United States and has proved beneficial and marked by excellent effects. An application was made upon wheat last autumn. It was prepared with 20 lbs. of sulphuric acid, with an equal quantity of water, and 100 lbs. of the phosphate of lime. The wheat upon which it was applied presented a manifest improvement over the other portions of the field. It had a darker green with a strong growth of leaves and much more vigor, and continues still to manifest the same improvement. I trust it will be analyzed by the excellent chemist of your society, Professor Way, and the result communicated to the society; and should it be found valuable, (as I believe it to be,) I shall take great pleasure (in behalf of Messrs. Emmons and Hammond, the proprietors of the mine,) in introducing it into this country, at a price which will bring it within the reach of all the agriculturists of Great Britain.

B. P. JOHNSON, *Secretary,*
New-York State Agricultural Society."

The council received this communication with their best thanks and referred the specimens to the chemical investigation of Professor Way, the consulting chemist of the society, who made the following report upon the subject:

August 20th, 1851.

"The specimen transmitted to me for examination was a mass of perhaps 10 or 12 lbs. weight, and of tolerable uniform character throughout. When broken it exhibited an uneven fracture, of a dull green hue, interspersed with lines of a chocolate color. Layers of quartz intersected it in various directions, and the outlines, or casts of shells, were in places tolerably numerous, (query.) The specific gravity of the mineral is 3·02. For the analysis, several pounds of the mineral, taken from all parts of the specimen, were broken up and reduced to powder, so that a fair average result might be obtained. The composition, in 100 parts, was found to be as follows.

	Percentage Composition when Dried.
Bituminous matter, and combined water, expelled at a red heat,	·69
Matter insoluble in acids, consisting chiefly of sand,.........	16·70
Silica, soluble in acids,..........	·65

Phosphoric acid, mean of four determinations, 20·50, 30·33, 29·77 and 31·23,	30·20	=62·27 Bone earth Phosphate.
Lime,	40·10	
Peroxide of iron,	6·47	
Magnesia,	1·08	
Chloride of sodium,	·08	
Soda,	·20	
Potash,	·25	
Sulphuric acid,	trace.	
Fluorine,	2·41	
Loss,	1·17	
	100·00	

As the coprolites of the crag formation contain, on an average, phosphoric acid equal to about 56 per cent of bone-earth phosphate, and as the objectionable admixture of carbonite of lime with them, reduces the effective strength of sulphuric acid with which they are treated, for manure, is about counterbalanced by the equally objectionable existence of fluoride of calcium, in the New-York mineral, I should estimate the commercial value of the latter, as compared with our own mineral sources of phosphate of lime, in the relation of their relative proportions of phosphate of lime, which, practically speaking, are very nearly the same.

"J. THOMAS WAY."

Not long after my return I received a letter from a gentleman connected with some of the leading establishments in Great Britain, for preparing special manures, in relation to this Phosphate, in which he stated that he was prepared to make an offer for the whole products of the Crown Point Mine, provided the quality should prove equal to that analyzed by Professor Way. This shows with what interest this matter is viewed abroad, and should lead us here to appreciate the value of our own mineral deposits for the purpose of improving our agriculture. It is proper to remark that the average of the deposit, so far as it has been examined, has given a higher per centage of phosphate than is shown by the analysis of Professor Way. Admitting it to be, however, only equal to that analysis, its qualities are of such a character as to secure, within three months after the analysis is published in England, an offer for the whole deposit for use on a foreign soil.

The most complete contribution to this department was from Messrs. Peter Lawson & Son, of Edinburgh, seeds-men to the Highland and Agricultural Society of Scotland. Their collection was very extensive, and neatly arranged; the plants, grain, vegetables, &c. named, and complete specimens of all the grasses, Wheat, Oats, Barley, &c., on exhibition. Mr. Lawson's specimens were arranged—1. Plants cultivated for their farinaceous seed, together with their straw or haulm. Complete specimens are shown in the straw, as taken from the field, with samples of the seed, with the flour manufactured from it. In this division were shown one hundred and seventy-nine sorts of Wheat, forty-two of Barley, fifty-three of Oats, sixty-four of Peas, twenty-five of Beans, and of other plants in equal numbers, forming in variety and extent such a collection as, it is presumed, cannot be elsewhere seen. 2. Plants cultivated for the herbage and flower, including clovers, the various grasses, with samples of the seeds and plants. This was a very interesting and useful division. The number of grasses cultivated in Great Britain is very great, adapted to every variety of soil, climate and use. Mixtures for pasture, for the fattening animal, for the dairy, for sheep, &c., are given, and thus the varieties, best adapted to each purpose, are always to be had, mixed in the proper proportions. 3. Plants cultivated chiefly for their roots, such as turnips, carrots, parsnips, beets, &c. Specimens of the bulbs, dried leaves and seeds, with very fine colored preparations in wax were given. The extent to which the cultivation of roots is carried in Great Britain is surprising. Its importance, however, to the agriculture of the country, can scarcely be overestimated. That it has been one of the many improvements which has contributed to the great advance which has been made in the agriculture of the Kingdom, is apparent,—and that attention to the more general introduction of a like system in this country, so far as it may be applicable, would be of very great advantage in improving our soils, in affording increased facilities for fattening animals, cannot, I think, admit of a serious doubt. 4. Plants cultivated for their use in the arts, manufactures and various economical purposes, such as flax, hemp, &c. 5. Plants cultivated for mechanical purposes. 6. Plants cultivated for their timber. Specimens of wood were given; the dried leaves; samples of the seeds and fruit as well as the young plants, as grown in the nursery. The seed of the plant is first shown, then the plant itself in flower, dried and mounted; and then that particular portion of it, as root, leaves or flower, in which its useful properties are innate. Specimens illustrative of their uses are also exhibited, as worsted dyed with a particular plant; flax in its various stages, linen, &c. All the plants grown in Scotland, for their timber are shown, first the seed, then a twig, showing leaf and blossom of the tree, while the structure of the timber is shown by transverse and longitudinal sections in a rough and polished state. The scientific and popular name is attached.

RAPE SEED.—This is extensively grown in Europe, and is imported into England; rape seed is crushed, and the rape seed oil cake is much used for feeding purposes, being nearly equal to oil cake, and its remedy for the ravages of the wire-worm when it is used upon the land as a fertilizer, which is destroyed by it, renders it very useful. It can be easily and profitably raised, yielding as much per acre as wheat.

In the catalogue of the Messrs. Lawsons, accompanying their exhibition, a synopsis is given of the vegetable productions of Scotland, in which the nature, properties, relative value, and use of their products are given. The Museum of the Highland Agricultural Society of Scotland, prepared and arranged by the Messrs. Lawsons, and which was partially represented by the one on exhibition is of the highest interest and importance. It is a place where all classes can find objects of instruction and amusement; and where the students will have opportunities of acquiring practically a knowledge of the value and properties of the productions of the country. It was in view of these and other considerations which might be named, that a collection for a museum in the agricultural department in our own State has been commenced, and which though in its infancy, is one of no little interest, and the attention which it receives is the best evidence that can be given of its appreciation and value.

The seedsmen to the Royal Agricultural Society of England, Messrs. Gibbs, of Halfmoon-st., Picadilly, London, exhibited upwards of five hundred samples of seeds. In this collection there was one of the best assortment of grasses for pasture-land that was exhibited, with specimens of the dried grasses accompanying the seed. In the United States department, a beautifully arranged collection of upwards of 300 varieties of indigenous plants of the State of New-York, arranged by *Miss Mary M. Chase*, of Chatham, Columbia county, N. Y., was shown; and which attracted, as it deserved, much attention, and was specially noticed by Her Majesty, in her visit to the United States Division.

In the English department were shown some very choice samples of wheat. A sample of Chidham wheat, grown on the Royal farm, shown by Prince Albert, weighing 66½ lbs. per bush., was remarkably fine. The heaviest wheat, shown, was a variety called "Lawrence's Prolixus," crystal white, weighing 67½ lbs. per bushel. This wheat has qualities which are considered to render it highly deserving of cultivation. The root is adapted to draw nourishment from an unusual depth in the soil, it produces a strong straw, and affords a prolific yield. There were several samples in the English department of white wheat, which weighed 66 and 67 lbs. per bush. A sample of wheat was shown weighing 65 lbs. 1 oz. per bushel, and the produce 40 bushels per acre, raised by the application of 3 cwt. of Peruvian Guano per acre, upon a soil that had formerly been considered worthless. A variety of wheat called "Giant Straw Wheat," which had been grown for several years by the exhibitor, is stated to have produced 60 bushels per acre, on an average. Its superiority consists in the length, size and stiffness of the straw, and in its abundant produce. Col. LeCouteur of the

Island of Jersey, exhibited a very choice collection of specimens of the most approved varieties of wheat, 104 in number, which was the most complete series of valuable wheats in the exhibition.

HYBRIDIZATION.—There were exhibited two cases of wheat in the ear and straw, showing the effects of hybridization. In some instances there was an entire change and great improvement in the grain. This process is the only one by which we can permanently alter the character of cultivated plants. The process is thus described by the exhibitor: "The hybridization was effected by removing the stamens of 'Piper's thick set' Wheat, a red variety before they had reached maturity, by opening each of the glumes (the husks or chaff) and carefully picking out the stamens upon the point of a needle; the pistils of the flower being left perfect, were a few days afterwards fertilized by dusting them with the pollen from stems of the "Hopetown" variety of white wheat, entirely different from the other; this produced a great number of varieties, partaking more or less of the parent stock, and from these the few specimens exhibited were selected.

Wheat was exhibited from Russia, France, United States, Australia, Canada, Spain, Belgium, Denmark, and from nearly all the countries represented. The collection from Russia was quite extensive, and some samples excellent. The straw of the wheat generally was remarkably bright, and free from any appearance of disease. The rye was unusually fine. The arrangement of the products from Russia was very attractive, and displayed as much taste as any portion of the arrangements in this class.

SPAIN.—There were some very good samples of wheat from Spain—and the exhibition of grain and maize was quite extensive. Spain possesses one of the finest climates, and has a greater range of vegetable productions than any other country of Europe—still the agriculture of the country is evidently in a very low condition. The production of wheat is barely sufficient for the consumption at home, and very little is exported. A very choice collection of plants, indigenous to the country, consisting of 105 varieties, were shown.

The whole exhibition from Spain, taken together, was so limited in extent, that it could not but lead to reflections of what once were the resources of the country—and should prove a lesson to others to avoid the course which proved so disastrous here. "When it is remembered that this is the nation that once received the untold treasures of gold and silver from the mines of Mexico and Peru—sent forth the mighty Armada to conquer England—and stood among the first upon the roll of nations—and now is reckoned among the least of the nations—and her exhibition certainly fails not to convince one that it must be so; the reflection cannot fail to arise—why is this so? The abandonment of that system of industry, which developed, not only the energies of the people but also the resources of the Empire, led to the extension of commerce, and increased, continually, the wealth of the Empire, in every direction, is doubtless the cause of the present position of the nation." Well will it be for others, if they are warned betimes and avoid the rock upon which the prosperity of Spain was so fatally wrecked.

United States.—The exhibition in this class was not large, and mostly from this State; though, in point of excellence, it was equal to any other.

Mr. Thomas Bell, of Westchester, received a Prize Medal for a very superior sample of Soule's winter wheat, which attracted much attention, and was highly commended by the Jurors. Mr. Bell exhibited four varieties of wheat, viz: Spring wheat, Soule's, Bald white flint, and Mediterranean—the latter as fine a sample of red wheat as was shown—also, Barley, Oats, Rye, Buckwheat, Flax seed, Millet, Clover, Grass seed and Indian corn. His collection was very neatly arranged and much the most extensive, from this country, and was highly creditable to him and to the State.

There was a small sample of Soule's wheat, from a crop of 63½ bushels per acre, weighing upwards of 63 lbs. per bushel, raised by Mr. William Hotchkiss, Lewiston, Niagara county, for which an honorable mention was given. This was the largest yield of wheat per acre, shown in the exhibition, for which vouchers were submitted to the Jury. This extraordinary crop of wheat excited much notice, from the fact, that a work lately published on this country, in England, had led some of the farmers there to expect that there was little danger to be apprehended from the wheat growers in the United States supplying the demands of the English market.

Mr. S. L. Thompson of Setauket, Suffolk county, L. I., had a very choice sample of golden Australian wheat, weighing upwards of 63 lbs. per bushel—yield 48½ bushels per acre. Mr. Thompson has raised during the past season, of this same variety, at the rate of 54 bushels, and upwards, per acre.

The New-York State Agricultural Society exhibited thirty-five varieties of wheat, raised by General Roswell Harmon, of Wheatland, Monroe county, in one season, on his own farm, very tastefully arranged. To this collection a Prize Medal was awarded.

A distinguished French gentleman, a member of the National Society of Agriculture of France, Mr. L. Vilmorin, who was present and examined it with much care, informed me that there were quite a number of varieties in the collection which were not known in England. This collection was presented to him, and in return he has forwarded to the Museum of State Agricultural Society a large number of varieties of wheat, as well as other grains and seeds, which will be distributed for trial, from some of which, it is hoped, we may obtain valuable additions to our wheats and other grain.

The wheat from the United States, taken together was equal in quality to that shown from any other country; and its quality for which were exhibited.

There were from Canada West very fine samples of wheat and other grains exhibited. The wheat was very superior.

Samples of wheat from Tunis had that ricy look peculiar to a warm climate and the barley was very inferior, indicative of the locality where grown.

Australia.—One of the finest samples of wheat on exhibition was raised in Australia, called the Australian wheat—it is a white bearded wheat, very large berry, weighing upward of 65 lbs. per bushel, and was pronounced by the jurors as one of the best on Exhibition. From a comparison with that of Mr. Thompson's, from this State, I was satisfied it was the same variety. Its introduction in this State came from a few grains that were found in the P. O. at Geneva, probably from a package passing through the mail—which were cultivated by Mr. Vedder, formerly of Geneva. It proves a very valuable wheat for Long Island, is cultivated to some extent in Chester county, Pa. with success. The flour is not quite equal to our very best Genesee wheats, perhaps, but is very good.

From Van Dieman's Land, some wheat was shown of very fine quality, and similar to that from Australia.

Barley and Oats from the United States and Canada were not as heavy as the samples shown from England and Scotland. Were the same care and attention given to the selection and change of seed as is practised there, my impression is that we should much nearer approach their standard. The greatest care is there given to the selection of seed and to a change—from the high to the low country—and this, if neglected there, will be seen in the diminished weight of the grain.

INDIAN CORN was exhibited mainly from this country, Canada, Austria, Africa, and British Guinea. The maize grown in British Guinea commands a higher price in the English market than that from the United States, though the supply is not very extensive. Why this increased price is obtained I did not learn, but presume it is owing to the better condition in which it reaches the English market. A few samples of the Forty Days maize, raised in England was shown; the varieties were not the best; the corn, however, was ripe. Our samples were generally very superior; and it was shown in the various forms in which it is used in this country. The Atlantic Dock Mills, N. Y., had a very extensive assortment of various preparations, prepared by J. R. Stafford's Steam Drying Apparatus. And the Oswego Starch Factory had a very superior article for culinary consumption, of great richness and delicacy, and extensively in use in this country.

Mr. B. B. Kirtland, of Greenbush, N. Y., exhibited a case of Indian Corn, which contained 34 varieties, very tastefully arranged in the ear—surrounded with samples of the stalk. The various products of corn, as prepared for use, were shown in glass jars, consisting of meal, farina, starch, oil, &c., and a description of the varieties, methods of cultivation and preparation for use of the meal, &c. This case attracted much notice, and was examined with much interest by Her Majesty and the Royal party, when they visited the American Department. A Prize Medal was awarded to Mr. Kirtland.

The Oswego Starch Factory received an Honorable mention for their fecula of maize, which was subjected to trial by the Jurors and others, and pronounced a very superior article. Hecker's Farina, N. Y., also received an Honorable Mention. All the articles exhibited by this firm were of great excellence, and received commendations. Hotchkiss & Phelps, of Ontario County, presented some very fine Kiln dried Indian Meal.

The extensive and increasing use of Indian Meal, in Great Britain causes a large demand for it, and, as its value is more appre-

The agent of the Atlantic Dock Mills, had samples of the bread made from their best meal, daily, on exhibition, fresh from the bakers, and the rapidity with which the bread disappeared, gave unmistakeable evidence that it found favor with many, who before, probably, were ignorant of its use.

Flour.—Flour was exhibited by England, France, United States, Austria, Canada and Spain. There were 14 exhibitors from the U. S., 7 from Austria, 7 from England, 5 from France, &c. The quality of much of the flour was very superior. Having been desired to go with the Jurors on their examinations, I had an opportunity of testing the various samples of Flour on exhibition. That from the United States was almost all made from Genesee wheat, and most of it was excellent, showing clearly the superior character of our wheat, as well as the excellency of our mills. Samples of the varieties, from which our best flour is made, were on exhibition. A very superior article was exhibited from France, by Mons. Darblay, who has extensive mills near Paris. This flour was called "Gruaux" flour, and was considered superior to any on exhibition. A Council Medal was awarded for its peculiar mode of manufacture. The method of manufacture, I ascertained while at Paris, having met Mons. Darblay there. The wheat is first passed through the stones, which are elevated a little, so as merely to loosen the hull, it is then passed through hand sieves, by which process the hull is separated from the berry, and the grain is then floured; the head of the bolt is taken off, producing this extraordinary fine flour, which is used mostly for pastry and biscuit, and commands in the London market 10s. sterling, about $2.20 extra per sack, more than the best English flour. We have in this country a process invented by Mr. Bentz, of Maryland, by which the hull is entirely removed by machinery, and flour equal, if not superior to that from France, is produced.

The Jurors were aided in their awards on flour, by Brokers from Mark Lane, who were furnished with samples of the various lots of flour, without a knowledge as to the maker; these were examined and tested, I think also by bakers, and on their report, submitted to the Jurors, the decision was made and was such as should be satisfactory. Two Medals were awarded to this country, one to Hecker & Brother, N. Y., the other to Raymond & Schuyler, Westchester Co. The flour was manufactured from Genesee wheat. The other exhibitors from this State, were Atlantic Dock Mills, A. Harmon, C. J. Hill & Son, M. & H. J. Leach, J. Lathrop, H. Finch, each had very superior samples. The effect of climate upon the properties of the wheat, whether starch or gluten predominated, and also the difference in that respect, in the varieties of wheat, were matters of observation among those who made careful examination of the flour on exhibition.

In this class the exhibition of cured Beef, Hams, Maple Sugar, Rice, Tobacco, &c., was, to a considerable extent, from this country, and many of the articles were of a very superior order. Prize Medals were awarded for *Hams* from Louisville and Cincinnati, one parcel being the celebrated "Duffield" Hams.

In this class a *Council Medal* was awarded to Gail Borden, Jun., of Texas, for his Meat Biscuit, an invaluable preparation. It was analyzed by Professor Lyon Playfair, and its preservative qualities pronounced perfect, and its highly nutritive qualities were fully shown by the analysis. The Jurors marked their approbation of it, by awarding the Council Medal, after a thorough trial by themselves, and the most celebrated caterers for London palates, it having been found to be, in all respects, what its inventor claimed for it. Having very frequently partaken of it prepared as soup, I can most heartily concur in the award which was given to it, and in the approbation which it received as an article of food. A preparation like this, is world-wide in its influence, and entitled to special notice. The following is Mr. Borden's description of its preparation: "The meat biscuit contains, in a concentrated and portable form, all the nutriment of meat combined with flour. It is easily preserved in all climates, and for a long period of time without change or deterioration. It is not liable to heating or molding, to which corn in grain or flour is extremely subject, in long voyages; nor is it attacked at all by the wevil or other insects. In evidence of its value, as an article of food, it is used by the American Army, on service on our Southern frontier. The nature of the discovery consists of a new process of preserving animal food, by obtaining, in a concentrated form, all its nutritious portions, and by combining them with flour or vegetable meal, and by drying or baking the mixture in an oven, in the form of a biscuit or cracker. One pound of this preparation contains the nutriment or essence of *five pounds* of good meat."

PREPARATION OF BUTTER, *preserved fresh.* This is secured by being packed in a *weak solution* of Tartaric acid; the butter is immersed in it, and sealed up in a glass or other vessel. Butter prepared in this manner in October, 1850, was opened in the Palace in July, entirely fresh and sweet. It could not be distinguished from butter newly made. The discovery is an important one, and will, no doubt, be made available by our dairy-men, who are preparing butter for California and other warm climates, as well as for residents in our large cities, who are fond of a fresh and first rate article.

SOLIDIFIED MILK.—There were several exhibitors of preserved milk, but the one which to me seemed to be best adapted to the purpose, was Fadeuther's Patent, London. By this process milk is purified, and reduced to solid form—so that one pound contains the equivalent of four quarts of the most pure milk: all unwholesome and indigestible matters are abstracted, leaving only the pure and nutritious essence of new milk, from the cow. If not exposed to excessive damp, it will keep for several years, without changing in the least. On ship board, and for medicinal and domestic purposes, especially for invalids or persons who cannot digest milk in its gross state, it is invaluable. It is easily digestible, and highly and admirably adapted as food for infants. The preservation of the substance in question, is due to the entire expulsion, by evaporation, of the watery constituents of the milk. In the absence of a certain quantity of water, putrefactive changes cannot proceed; after being dissolved in boiling water, reproduced in the form of milk, the solution will keep perfectly pure for several days. It has, I am informed, since the close of the exhibition, been introduced into this country, and it proves entirely as valuable in its qualities, as claimed for it by the inventor.

Preserved Potatoes.—A preparation from the finest potatoe, containing all the flavor and wholesome properties of the vegetable in its best state. It will keep in any climate and its cooking is effected in about ten minutes; proving a very great advantage over potatoes in bulk. Its valuable qualities are certified to by Prof. Brande, Dr. Ure and many others, and the testimony of numerous ship owners and masters of vessels who have used it. This is prepared in London and is patented in this country. Having used this preparation I am satisfied the merits of the preparation, as an article of food, are equal to the commendations bestowed upon it.

The articles of food shown from the Tropics, in considerable variety, were interesting. Specimens of meals from tropical plants were shown. That from the plantain, made by drying in the sun and then reducing it to powder, was superior to any of the other. Millet, which is used, as an article of food, very extensively in tropical climates, was exhibited in several departments, but that from Russia, both Black and Red, was superior to any other. Some fine samples of rice were exhibited. The Carolina rice from this country was awarded a Prize Medal.

Coffee.—Fine samples were exhibited from several countries. An article extensively in use in England, and perhaps elsewhere, as a substitute for coffee, and also for the purpose of mixture with coffee, was shown. This was Chicory, a tap-rooted plant of the endive family, which is very readily grown, the root of which when dried is roasted and ground and mixed with coffee. From its medicinal qualities it is considered a valuable admixture, as it counterbalances the astringent effects of the coffee; and being much cheaper, it finds great sale. By many, the coffee thus prepared is preferred to the pure coffee. It is on sale in the English coffee establishments, ground, and persons usually selected one-third chicory two-thirds coffee, and prepared the mixture themselves. It doubtless is, however, often sold with a much larger per centage as real coffee. It is nutritious and the flavor is pleasant. The seeds are sown in April, in drills, and managed very much like a crop of carrots; care being taken to keep it entirely clean. It is gathered in September, the roots or tubers carefully washed, cut in small pieces, either by hand or a turnip cutter, placed in canvass bags and dried upon a kiln, and then disposed of to merchants, who prepare them, the same as the coffee berry, for use. The leaves of the plant are very largely used for dyeing; a valuable dye-stuff called "Pastel" or "Imitation Woad," is mostly prepared from the leaves; it is very largely used by wool dyers, and is valuable in the dye-vat for fastening colors in cloth. The main supply for England is received from Belgium and Germany, though it is now cultivated to some extent in England and Ireland.

The exhibition of Hops from England was very extensive. The Golden hops grown in Mid Kent was superior to anything of the kind I have ever seen. The soil upon which this variety is grown, has in it an abundance of Phosphate of Lime I believe, and this, together with the treatment they receive, are among the reasons given for their superiority, and they are used for the finest ales. A number of other varieties of fine flavor and appearance were on exhibition, especially the Farnham hops. The hops grown in Canada and the United States, are not considered equal to those of Great Britain for the use of Brewers, whether owing to the climate, or the manner of culture and preparation, I cannot say, though probably each has more or less influence. They will not, as I was informed by a Canadian brewer, whom I met in London, make as fine ale, as the best English hops. He having used the hops grown in this country and in England, seemed a competent judge. I had designed to have visited the hop districts in Kent, and ascertained the particulars of their management, and the soils best adapted to the production of the fine varieties, and the peculiar process and preparation, but my time was so much occupied that I could not accomplish it. I was told, however, that a porous rocky sub-soil, covered with two or three feet of good vegetable mold, was considered the best soil for hops. It is all important, to secure a dry sub-soil. The finest hops are those which are picked when they are of a light yellow brown; and when great care is used as to the quality of the hops, they are divided into three sorts, the green, not entirely ripe, the light yellow brown in their prime, and the dark brown which are past their prime. There was exhibited a drawing of a magnified view of the formation and growth of the hop fungus, from its earliest to its latest stage, which was an interesting and useful study for those engaged in the culture of hops.

Oil Cake was exhibited to some extent. That from the United States is sold in England to a large amount, used chiefly for fattening animals, from two to four pounds being broken daily with their food. There was nothing peculiar in the quality of that exhibited.

There was a good collection of raw materials, and products shown from Greece, evincing an improving state of Agriculture. From Egypt there was a very good exhibition of Rice, Wheat, Indian Corn, Barley, Beans and Lentils.

In this class, Tobacco was exhibited more extensively from this country than any other, and mostly the product of Virginia and Maryland. There were samples from Great Britain, Algeria, Belgium, Russia, Spain, Egypt, Greece, Turkey, &c. The manufactured tobacco from this country, that from Richmond especially, was adjudged superior to any other, and the Prize Medal was awarded. Segars were shown of very extraordinary excellence from several of the nations exhibiting.

Teas from China far superior to anything I have ever witnessed, showing one thing at least, that the great majority of what is called and used as tea, in this country, never finds a place in the house of the celestials. The difference in all the varieties was so apparent, that no one could hesitate for a moment, in believing, that a very large proportion of what is imported into this country and Great Britain, is of a very inferior quality, or is adulterated after its arrival. The edible birds' nests, of which we have often heard, were exhibited in the Chinese department. There was one exhibition of Tea in the India department.

SUGAR was on exhibition from Great Britain, United States, Spain, British Guinea, France, Belgium, &c. There were many very fine specimens from the Sugar Cane. Beet Sugar was also exhibited quite extensively from France, Austria, Russia, Zollverein, England; and no less than two Council Medals, and ten Prize Medals, were awarded for Beet Sugar, the quality equal to the Cane Sugar. Two Council Medals were awarded to France, one of them for samples of beet sugar extracted from molasses, which was considered as exhausted by the ordinary process. The other, produced by a method, the result of which is to save valuable substances previously lost in the manufacture, and consequently to reduce, materially, the price of the sugar itself. There can be little doubt, that the production of sugar from the beet root can be made profitable, and the general introduction of the process for which the Council Medal was awarded, will enable its being manufactured in countries where the cane cannot be cultivated, at a price as low as the cane sugar can be afforded. Maple Sugar was exhibited from the United States, and Prize Medals were awarded for two samples, one from Vermont and one from Canada. A very superior sample sent by the New-York State Agricultural Society, unfortunately fell into hands, shortly after the exhibition opened, of some persons who, not satisfied with tasting, took the whole, and the Jurors were not permitted the privilege of passing upon it. It was made in Jefferson County, in this State, and was superior, in my opinion, to any other on exhibition.

E. R. Dix, from this State, received an Honorable Mention for Flax, Hemp, and other products.

Taking the exhibition in this class from the United States, as a whole, it was certainly creditable to our country, although not as large as it should have been, fully to develope our capabilities—still it was sufficient in quantity and variety to show to those in attendance upon this Great Exhibition, of the Art and Industry of the World, that the new continent to which such multitudes of the starving of the Old World were rushing, had bread enough and to spare, and that from her fertile vales and hills their wants not only could be supplied, but a *home* could be furnished for them all.

CLASS 4. *Vegetable and animal substances,* chiefly used in manufactures or as implements or ornaments.

This was a very interesting and important class, including Cotton, Hemp, Flax, Wool, Silk, Furs, Dyes, Dye-woods, Starch, Gelatine, &c. The exhibitors were very numerous and from almost all the countries represented in the exhibition. RAW COTTON was exhibited largely from the United States; there were several exhibitors, and in smaller quantities, from Algeria, British Guinea, Russia, South Africa, China, Egypt, India, Portugal, Spain, Trinidad, St. Helena, Western Africa, England, &c. There was a very critical examination made of the samples on exhibition, and the same course was adopted by the Jury as in the examination of flour, by calling in cotton brokers to aid the Jurors in determining the value of the various samples on exhibition. It may readily be imagined that in relation to the cottons exhibited, there was much interest excited among the Americans and English, as to the result of the examinations. A strong desire was evident, in regard to the samples from the British possessions. The result, however, was most satisfactory to our Cotton growers. Ten of the Prize Medals were awarded to them, and only five to all the others. A council Medal was awarded to John Mercer, Accrington, Eng., for a process by which the fiber of Cotton is modified by caustic alkali, whereby the fibers become contracted and fulled, converting thin and coarse cloth into strong and fine; and at the same time giving greatly increased and improved powers of receiving colors in printing and dyeing, and also in making them more permanent. The samples exhibited fully sustained the claims of the invention, and its great value to the manufacturers of cotton goods, as well as to the consumers, was most obvious, and it will doubtless attract attention in the right direction, from those present and who were prepared to appreciate its importance.

Wool.—There were some very extraordinary samples exhibited. The finest, and for all purposes the most valuable of the fine wools, probably were from Austrian Silesia. The texture and style of this wool was certainly very superior, and had all those qualities which, to a manufacturer, are so very important.

There was but a small exhibition from the United States: only six samples on exhibition, though four others appeared upon the catalogue, but were not sent, they were of a character, however, to attract attention, and found much favor with the Jurors and examiners, and four prizes were awarded to American exhibitors. I was with the Jury in their examinations in this department, and was satisfied, as I believe the Jury were, that next to the very best samples from Silesia, the samples from America, to which the Prize Medals were awarded, were equal to any of the fine wools. Samples from the flock of J. G. Strean, Washington county, Penn., for which a Prize Medal was awarded, (which by *mistake* were entered in the name of *J. H. Ewing*,) were exceedingly fine, and sustained the reputation, as a wool grower, which has long since been awarded him in the United States.

A Council Medal was awarded to *Jean Louis Graux*, of France, for a fleece of Merino wool of great fineness and of the best quality for combing, and possessing increased strength, brilliancy and fineness of fiber. He is described as the originator of this new and valuable quality of wool. It was certainly a very superior sample of Merino wool, and doubtless entitled to the encomiums passed upon it. It was different from the wool from the Rambouillet sheep and superior to it in the fineness of its fiber—samples of wool from the establishment at Rambouillet being shown in connection with the other wools from France. The breed of sheep which Mons. Graux has, will prove a valuable acquisition to this country, I have no doubt, in crossing with our Merinos and Saxons.

Australia had some very fine samples of wool. The exhibition from England was mainly from the sheep bred for their mutton, and of great variety—both as respects the length of the wool, and the fineness of the fiber. A few samples of Merino wool were shown from England. The fleece of a South-down ewe, which was seven years old, was shown; had never been shorn; the wool 25 inches long; its weight 36 lbs.; and this was greater than the aggregate length and weight of wool taken from any other sheep in the same flock annually shorn. The owner stated in a notice appended to the fleece, that the animal suffered no perceptible inconvenience from this enormous fleece, during the warm months of the season. In the Magdeburg department, the fleece of a one year old, fine wooled sheep, stuffed, was shown—illustrating, fully, the value of having all parts of the body well covered with good wool, of uniform quality, a property so desirable to be secured by the breeder, and to which, it is to be regretted, far too little attention is paid in this country, as well as in others. In this specimen there seemed to be no place where wool could be grown, but it was covered, and with scarcely any perceptible difference in the quality of the wool in different parts. From Spain the specimens were not equal to the reputation which the wools of that country formerly enjoyed. The reason, so far as could be ascertained, is, that for several years past, there has been far less attention given to the breeding of sheep, than was the practice at the commencement of the present century. Austrian Silesia has the best flocks, and the best managed, of the finest wooled sheep, judging from the wool exhibited, and from the descriptions given—and for the Merino wool, there was no country which exhibited any that was equal to that of Mons. Graux, from his flock at *Ferm de Hauchamp*, *Commune de Javin-Court*, (Aisne.) Fine fleeces of Merino wool were exhibited by William Blakeslee, of this State, which were very excellent specimens of this variety.

FLAX.—The exhibition in this department was of a most interesting character. The question of the best methods of preparing the fiber for use, is exciting very great attention, not only in Europe but in this country, and it was expected, therefore, that everything relating to the subject so far as yet developed, would be found in the exhibition. In this I was not disappointed. The show of flax, in all its stages, as prepared by the different processes—the various cloths manufactured—the process of manufacturing, were all fully exhibited. There are three methods of preparing the fiber of the flax, which are attracting much attention at present, being deviations from the old methods which have long prevailed. The *first* of these, and which as yet is the most approved in Ireland, is what is called Schenck's system of steeping flax straw in water, heated to 90 degrees—invented by Mr. Schenck, an American, several years since. By this process, owing to the elevated temperature given to the water, the fermentation necessary for the separation of the fiber from the woody matter of the flax straw, is so much accelerated that the operation requires only about sixty hours. It was supposed that this rapidity of process would weaken the fiber—but from experiments made in England and upon the continent, it is demonstrated that not only is a better description of flax secured, but a larger produce obtained by the use of hot water, than is possible by the old, slow and uncertain system of rotting. There are ten establishments upon this principle at work in Ireland.

A *second* method proposes to lessen the bulk of the flax crop, without resorting to steeping, so as to facilitate its transit to the most advantageous market, by passing the straw under a common "breaker," and separating the fiber by any of the usual methods. It is stated, as prepared in this way, without steeping, the fiber is well adapted to the manufacture of various coarse articles, such as sail cloth, &c., and that by the diminution in bulk, which the straw experiences, it could be employed with greater facility in steeping, and the operation requires less time, as the water would act more readily upon the bruised flax.

On trial, however, it is found that the previous partial separation of the woody matter of the straw, instead of shortening the steeping process, has a decidedly opposite effect. The necessary fermentation, from the removal probably of the organic compound of the straw, being exceedingly imperfect.

The *third* method of preparation, which is now exciting very great interest, was fully illustrated in the exhibition by the inventor, Chevalier Claussen.

It is proposed as a means, not only of facilitating the separation of the flax fiber for its ordinary uses, but it is strongly claimed for it, that it is capable of converting it into a form in which its characters are completely assimilated to cotton, and in which it may be spun, either in whole or in part, on the common cotton spinning machinery, and that it will enable the flax grower to supply with profit the raw material, for the use of manufacturers, at less price than foreign cotton can be imported. It is also claimed, that the raw material can be so prepared as to be advantageously mixed with wool for the production of cloth, while any flax refuse can be converted into an excellent article for the manufacture of first class paper at a lower price than white rags can at present be obtained.

The invention is thus described by the Chevalier:

"The principle of the invention by which flax is adapted for spinning upon cotton, wool or silk, independent of flax machinery, consists in destroying the cylindrical or tubular character of the fiber by means of carbonic, or other gas, the action of which splits the tubes into a number of ribbon-like filaments, solid in character and of a gravity less than cotton, the upper and under surfaces of which are segments of circles, and the sides of which are ragged and serrated. In order to explain the nature of the process, by which this change is effected, it is necessary, first, to explain the structure of the flax plant: The stem of the plant consists of three parts: the "shove," or wood, the pure fiber and the gum, resin or glutinous matter which causes the fibers to adhere together. In the preparation of the plant for any purpose of fine manufacture it is necessary, first, to separate from the pure fiber both the woody part and the glutinous substances. The former of these may be removed by mechanical means almost as simple as those employed in the thrashing of wheat. In order, however, to remove the glutinous substance from the fiber, recourse must be had either to the fermentation produced in the steeping process, or to some other chemical agent. The present system of steeping in water, whether cold or hot, is, however, ineffectual for the removal of the glutinous substances adhering to the fibers, a large percentage of which is insoluble in water. The first process, therefore, which is necessary in the preparation of the flax cotton is to obtain a perfect and complete disintegration of the fibers from each other by the entire removal of the substance which binds them together.

This is effected by boiling the flax for about three hours, either in the state in which it comes from the field, or in a partially cleaned condition, in water containing about one-half per cent. of caustic soda. After undergoing this process, the flax is placed in water, slightly acidulated with sulphuric acid; the proportions of acid used being one to five hundred of water. Any objection urged against the employment of such substances, even in the small proportions above stated, are at once met by the fact, that the soda present in the straw, after the first process, neutralizes the acid, and forms a neutral salt, known as sulphate of soda. This process producing, as it does, a complete separation of the integral fibers from each other, is equally adapted for the preparation of long fiber for the linen, or of short fiber for other branches of textile manufacture. When required to be prepared for linen, all that is necessary after the above process, is to dry and scutch it in the ordinary modes. The advantages which this mode of preparation possesses over any other mode in use, are stated in the official report of the Proceedings of the Royal Agricultural Society of England, to be the following:

1st. "That the preparation of long fiber for scutching is effected in less than one day, and is always uniform in strength, and entirely free from color, much facilitating the after process of bleaching, either in yarns or in cloth.

2d. "That it can also be bleached in the straw at very little additional expense of time or money.

3d. "That the former tedious and uncertain modes of steeping are superceded by one perfectly certain, with ordinary care.

4th. "That in consequence of a more complete severance of the fibers from each other, and also from the bark and boon, the process of scutching is effected with half the labor usually employed."

Complete, however, as may be the separation by this mode of treatment, the fibers from their tubular and cylindrical character, are still adapted only for the linen or present flax manufactures, as their comparatively harsh and elastic character unfits them for spinning on the ordinary cotton or woolen machinery. At this stage, therefore it is, that the most important part of the invention is brought into operation.

The flax, either before or after undergoing the process required for the severance of the fibers, is cut by a suitable machine into the required lengths, and saturated in a solution of sesqui-carbonate of soda (common soda,) a sufficient length of time to allow of the liquids entering into and permeating by capillary attraction every part of the small tubes. When sufficiently saturated, the fibers are taken out, immersed in a solution of diluted sulphuric acid of the strength of about one part to two hundred parts of water. The action of the acid on the soda contained in the tube liberates the carbonic gas which it contains, the expansive power of which causes the fibers to split, and produces the result above described. The fiber is then bleached and after having been dried and carded, in the same manner as cotton, is fit for being spun on the ordinary cotton or wool machinery.

From this description of the process and the promised results, it will be apparent that this is a discovery of very great interest, if it proves successful. It has undergone various trials before the

Royal Agricultural Society of England, and other Associations, and has been reported upon favorably, and is undergoing a thorough trial at some of the best Flax mills in Ireland, reports from which will be looked for with great interest.

There was exhibited in the Palace, this invention in operation, preparing the Flax for use, and all the varieties of the fabric manufactured from it, and from the appearance of the different varieties, so far as the complete manufacture possessing the qualities described, the success appeared complete. As to the question of cost, it is not yet, I think, decided, that the manufactured article will be able to compete with cotton, but a great point is attained, if the flax-cotton and flax-wool can be obtained for manufacturing purposes, as claimed by Mr. Claussen. Samples of flax were exhibited, prepared by this process, designed to show the universal applicability of flax fiber to the purposes of textile manufactures.

The *first* samples were intended to show the various processes resorted to in the preparation of flax into a material capable of being spun alone, or mixed with various proportions of cotton on any ordinary cotton spinning machine. The samples show: 1st. The flax as pulled, cut into suitable lengths by machinery. 2nd. As it appears after having undergone the first process of saturation in a solution of soda, required to remove the glutinous substance adhering to the fibers. 3d. The fibers as seen after the removal of the "shove" or woody part of the plant. 4th. The flax transformed into a cotton-like substance, by the expansive force of carbonic acid gas produced by the action of an acid upon the soda, taken up by the fibers in the previous stage. The 5th, 6th and 7th show the same, bleached, dried, carded and ready for spinning.

There were also shown samples of mule and throstle yarn of various numbers, some of which are composed entirely of Flax, and others of various proportions of flax and cotton. Both of these descriptions of yarn were exhibited, bleached and dyed in various colors, for the purpose of showing that flax, prepared upon this process, is capable of receiving the same opaque dye as cotton, and, in the mixed yarns, no difference can be seen in point of color or of shade between the two materials. Samples of grey and bleached, dyed and printed cloth, woven from the yarns, prepared as above, were also exhibited. This description of yarn is called "Flax cotton yarn."

The *second* series of samples consists of yarns formed of various proportions of flax and wool, called "Flax wool yarn," the flax prepared mainly, as for spinning on cotton machinery. Those exhibited, spun on ordinary woolen machinery. Flannel, woolen cloths, milled and dyed, woven from these mixed yarns of various colors were shown.

The *third* series contains samples of flax prepared for spinning alone or combined with short silk upon the ordinary silk machine. The flax so prepared, dyed of various colors, and possessing, unlike the samples prepared for the cotton machinery, the brilliancy of color which is peculiar to silk. The yarns formed of equal or other portions of flax and silk, called "Flax silk yarns," were shown dyed, and no difference in shade or color is perceptible in the two materials. Silk woven from the yarn was also shown.

In the *fourth* series, samples illustrative of the exhibitor's mode of preparing flax for spinning upon the ordinary flax machinery, and for its manufacture into linen fabrics.

A *fifth* series consists of various samples of hemp, jute and the fibrous substances prepared, either in whole or in part, as above; and samples of cloth, woven on a circular loom of Chevalier Claussen's, showing the applicability of the invention to articles of Hosiery. The advantages claimed as arising from the process, illustrated in the fourth series, for preparing flax for the linen manufacturers, are its simplicity, rapidity, certainty and cheapness. The first three samples were intended to show the applicability of the flax fiber for textile manufactures, other than linen or cambrics. It can also be spun alone, on cotton machinery, by the ordinary cotton process. It has long been a desideratum with woolen manufacturers of all classes, to obtain a material cheaper than wool, possessing the same felting or "milling" properties. Cotton and China grass have not this property. The flax fiber is said to be stronger than wool, and to mill equally with it. The sample shown was milled from 54 inches wide (as it fell from the loom) to 28 its present width. To prove its felting properties fully, hats have been made from the fiber, mixed with an insignificant portion of rabbits' hair. The Chevalier, also exhibited a Rotary machine for knitting, &c., which will be noticed under the head of machinery. Samples of the flax as prepared by the above process are placed in our Agricultural rooms.

I have been induced to give thus fully the description furnished by Mons. Claussen, of his process and the advantages claimed for it, believing that it is among the most important of the inventions exhibited, calculated to benefit and advance the industrial interest of our country, and though it may not in its present condition, be equal to all that is claimed for it, still it is progress in the right direction, and I shall be greatly disappointed if it is not made available by the ingenuity of our countrymen in some form, so to cheapen the production of flax for the manufacturer, as to give a new impulse to its culture, and arrest the large amount of money now annually paid for flax fabrics, from the fiber grown on a foreign soil. The imports of goods manufactured from flax in the U. S. from 1844 to 1849, amounts to nearly six millions of dollars annually. The table of the exports from England, for the years 1843, 4 and 5, which we have before us, shows the amount to be over twelve millions annually. Our trade being mainly from there, is evidence of the importance at least of our use of the article in sustaining their manufacture of flax. Samples of the "flax cotton" in yarn, and fabrics were exhibited at the Annual Fair of the State Society at Rochester, in Sep. 1851, and in the minds of practical men who gave a full examination to the articles exhibited, they fully sustained the advantages claimed for them, in the remarks we have above given.

In the awards made by the Jury, Chevalier Claussen received only a Prize Medal, probably on the ground that his invention is not yet so thoroughly demonstrated, practically, as to entitle it to a Council Medal—though, I believe many, who in all respects were well qualified to judge on the matter, differed with them in their opinion.

The Council Medal was awarded to the Belfast Flax Improvement for "the persevering and successful efforts to improve the quality of the fiber of flax." The specimens of flax exhibited by them in great variety, showed most clearly the importance of the improvements they had effected, which were in the highest degree creditable to them, and worthy of the commendation bestowed upon the society. It would be well for our State to make similar efforts for the improvement of the various crops which are grown in the State and to encourage and develope the qualities of others which might be productive of good to our whole industrial interests.

The countries from which flax was exhibited, were England, Austria, Belgium, Canada, United States, China, France, Netherlands, New Zealand, Portugal, Russia, Spain, Sweden, Norway, Van Dieman's Land and Zollverein. The flax from the various countries from which flax is imported into England, was arranged by one of the English exhibitors, in connection with hemp, illustrating very satisfactorily the qualities of flax and hemp raised in each. An arrangement of flax was also made showing the various methods in use in preparing the fibers.

SILK.—The most brilliant part of the exhibition was the silk department, especially that of manufactured fabrics. The exhibition of French manufacturers was remarkably rich and gorgeous. Those from Lyons, St. Etienne, Avignon and Nismes, showed a very large variety, from the simplest poplins to the most gorgeous and splendid patterns, unsurpassed by any other portion of the exhibition.

A very rich display was made in the English department, scarcely inferior to that from France. There were between eighty and ninety English exhibitors of silk goods, and some of them had the most attractive arrangement and display of any in the exhibition. The "Silk Trophy," which was arranged in the main avenue of the Palace, composed of the richest Tissues, Brocades, Silk Damasks and Velvets, arranged around glass mirrors, excited great attention and was thronged with visitors constantly. From Spitalfield, so long celebrated in the manufacture of silk fabrics, some peculiarly rich designs were displayed. There were exhibitions from several other countries.

There was a very extensive exhibition of Woods from all parts of the world. Mr. R. L. Pell, of this State, exhibited a very extensive collection of forest and other woods, upwards of one hundred in number, grown upon his own farm in Ulster county, and received an Honorable Mention for his exhibition, and his collection, we believe, was presented by him to the Royal Commissioners. But the most perfect collection of American woods was to be seen in the English department, in a collection of woods from various parts of the world, upwards of seven hundred in number, arranged geographically, accompanied with the scientific and local name of each, weight per cubic foot, and the uses of each. Probably never before has there been so much useful information afforded of the qualities and value of the woods of the world, as was contained in this collection. It was prepared by a Mr. Sanders of Wandsworth, England, and received a Prize Medal, to which, certainly, he was most justly entitled. It was a resort for every one who desired to become familiar with the productions of the world not only, but even with those of his own country; for there was more information in regard to the woods of America, than can be found by those who have not been favored with opportunities of travelling through the different States of our Union and examining critically for themselves.

In this class, Oils of various kinds were exhibited. A very choice sample of oil of peppermint from Messrs. H. G. & L. B.

Hotchkiss of Lyons, in this State, received a Prize Medal. Its quality was very superior, and it is understood that orders for the entire manufacture were given by a leading house in London.

STARCH.—There was a very extensive exhibition of this article, prepared from a great variety of subtances—Wheat, Rice, Sago, Potato, Indian Corn, &c., Among the samples, there was exhibited from this State, by the Oswego Starch Factory, manufactured by T. Kingsford & Sons, a very fine sample which attracted, as it deserved, much attention, and was pronounced by the Jury equal to any they had seen—and it was awarded a Prize Medal. Inquiries were made by several dealers, as to the price at which it could be afforded in London—and if a supply can be furnished, there is no doubt of a market there for any surplus that can be manufacfactured. This establishment has been in operation since 1849, and furnishes employment for about 100 persons. The amount of Corn and Wheat annually converted into Starch is 150,000 bushels. From a chemical analysis, this Starch is found to be an article of uncommon purity, as will appear from the analysis made by A. A. Hays, State Assayer of Massachusetts.

Results of an analysis of a sample of Oswego Starch:

"The sample presented prismatic fragments of very white Starch granules, which, when magnified presented their forms and exhibited the appearances shown by Starch from grain. 1000 parts afforded, of matters soluble in cold water, and consisting of Dextrine, Gluten and Lime Salts 1.20; Carbonate of Lime, Phosphate of Lime and Magnesia 1.56; or, as matter apart from pure Starch, in all, 2.76 in 1000 parts. This proportion is much less than commercial Starch affords generally.

From the result here stated, it will readily be inferred that this is an article of uncommon purity. In the originate proportion of moisture, nearly absolute freedom from other vegetable principles and earthly matters, it agrees with the finest qualities, while its whiteness and absence of organic acids, indicate that excellent materials only are used in its production."

Colgate & Co., N. Y., whose Starch has long been celebrated in this country for its purity, had some of their Starch on exhibition, where its reputation was fully sustained, and a Prize Medal was awarded.

CLASS 5.—B. *Machines for direct use, including Carriages, and Railway and Naval Mechanism.*

MACHINERY.—In this department, as was to have been expected, the English display a far more extensive assortment than all the other nations. The exhibition shows what perfection has been attained, and the beauty of finish and arrangement, is certainly worthy of all praise. Of machinery, of really new principles, there did not appear to me to be much in the English department, and one of the English writers, in speaking of this department says: "We could not see any machine of new principle or construction, there are improvements here and there, rendering the machines more perfect." There was much however, showing the great progress which has been made for the last fifty years, that bears a most important part in the great progress which has been made in our world. I was informed by a very skilful mechanic from our State, who examined the machinery with great minuteness, that very many of the most valuable improvements were taken from American inventions, and the very machines were named in which they were to be found.

A writer in reviewing what has been done, says: "Steam navigation was not only practically unknown at the close of the last century, but in England was held to be visionary by Watts; now, however, thousands of steam vessels plough the ocean, and fill the harbors of every commercial nation of importance, and pass from one continent to another, with a facility and certainty that brings America and Europe within almost a week's time of each other.

"In railways, all that was practically known at the beginning of the century, was a few rude colliery tram roads, rudely constructed wood or cast iron rails, and traversed by ruder wagons, drawn by horses, at the rate of three or four miles per hour; and even as late as 1824, George Stephenson, the father of the locomotive, stated at a meeting at Leeds, that "he *hoped* yet to move the trains at the rate of 10 *miles* an hour; and Nicholas Wood in the first edition of his 'Treatise on Railways,' published about the same time, speaks of the notion of such speed, as being by its very *extravagance*, likely to retard the progress of the railway by steam. Stephenson lived to see 80 miles an hour accomplished, and the whole system of stage coach arrangements superseded, and the manufacturer at the extreme of England, enabled to proceed to the metropolis in the morning, transact his business and return to his home the same evening. If progress has been made in these departments, so also have surprising changes been effected in the manufacturing branches." The Jaquard loom, has taken the place of the old hand-loom, exhibiting its wonder working power; and the power loom by Bigelow, for weaving Brussels carpets, has from our own country through the great exhibition, astonished the world at the accomplishment of what before was deemed inapproachable by the aid of machinery; weaving Brussels carpets by the power loom. The London Morning Chronicle in speaking of the United States department said: "This department has again received an important accession of strength, in the shape of Brussels carpets, woven upon power looms. Although various attempts have been made to adapt the power loom to carpet weaving in this country, there is not we believe, at this moment, any machinery perfected for the object; our American brethren have gained another step ahead of us, and have won another laurel, on this well contested field of industrial arts."

. . . . . .

The printing press too, throwing off 15,000 sheets per hour, instead of 250, as formerly the extent of the hand press, and that in England, as late as 1814. But to crown all, the Electric Telegraph brought into real acting life, by our own Morse, now sends the intelligence from island to continent, as well as across continents, with the rapidity of lightning, actually annihilating time—and this all exhibited before the world in the great exhibition. These results of the advancement of machinery and engineering upon the ocean and upon the land, are truly wonderful, and are exerting an influence upon the world's progress of the most gratifying character, and will, with the diffusion of light and truth, under the blessings of Heaven, it may be hoped, effect the regeneration of our world. The exhibition attests in its every department the advance which has been made.

The models of the Steam Engines, afford nearly every various form of the Engine which has been found useful in its application, to Manufactures, to the Steamer and Locomotive. It would be gratifying to dwell on some of these—but in a report as limited as this must of necessity be, it cannot be done with propriety. An interesting incident, related of one of the gentlemen connected with this great work, came to my notice since I left England. The *first Engine driver*, Mr. *Fox*, now *Sir* Charles Fox, the acting and main contractor for the Crystal Palace, and who, by his energy and skill has so greatly distinguished himself—*was* the *first person* who guided the engine which Stephenson built, and aided to win the prize which Stephenson received. His energy of character thus early developed, under very trying circumstances, shadowed forth the successful and distinguished man of 1851.

Most of the Steam Engines, on exhibition, were from England. A large number of oscillating engines were exhibited, in operation. These were very compact, occupied but little space, and seemed to perform well. They are used on board many of their steamers. A Council Medal was awarded for a couple of Marine Engines, by Penn & Son, of Greenwich—and a Council Medal to a Belgian for a pair of vibrating cylinder engines, in connexion with other engines and boilers. Two Locomotive Engines, by S. R. Crampton England, very powerful ones, received a Council Medal; they were designed for the London and North Western Railway. The admirable manner in which the engines were got up, was a subject of observation and remark.

The United States did not exhibit any Marine Engines—a drawing of a pair of Engines, such as are fitted in the steamer Pacific, was on exhibition and attracted much notice. Her rapid passages are well known, and regret was often expressed that the engines were not present. That they would have reflected credit upon our country, none can doubt. Erricson, of New-York, exhibited Dunn's Patent Caloric Engine—but as it was not in operation, no opinion was given by the Jurors. The invention consists in producing motive power by the application of caloric to atmospheric air, or other permanent gases or fluids susceptible of considerable expansion by increase of temperature; the mode of applying the caloric being such that, after having caused the expansion or dilatation which produces the motive power, the caloric is transferred to certain metallic substances, and again re-transferred from these substances, to the acting medium at certain intervals, or at each successive stroke of the motive engine; the principal supply of caloric being thereby rendered independent of combustion of consumption of fuel. Accordingly, whilst in the Steam Engine, the caloric is constantly wasted by being passed into the condenser, or by being carried off into the atmosphere, in the improved engine, the caloric is employed over and over again, thus enabling the operator to dispense with the employment of combustibles, excepting for the purpose of restoring the heat lost by the expansion of the acting medium, and that lost by radiation also, and for the purpose of making good the small deficiency unavoidable in the transfer ot the caloric.

A working model of this engine was expected at the exhibition, to be put in operation—but it did not arrive. If what is claimed for it shall prove to be correct, it will be a great advance on our present engines. Since my return I have heard that the engine intended for England has been put in operation, in New-York, and that its success, in the opinion of the operators, is placed beyond a doubt. Whether this be so or not, probably the public will soon be informed. If it succeeds, it will be another triumph for our engineers.

C. Starr, of New-York, exhibited two machines for book-binding—one for backing, the other for finishing the books. The machines are very powerful, a single stroke effects the embossing of the covers. They possess great advantages over machines heretofore in use for this purpose. A miniature engine, made by Master

Higginbotham, of Oneida, in this State, was exhibited, and was highly creditable to his skill.

In this class were exhibited Fire Engines and Annihilators, and Fire Escapes, to convey people from houses in flames—and systems of fire proof constructions to prevent the ravages of fire. There was nothing new in the Fire Engines exhibited, of special importance. They were shown of all sizes—a cabinet Fire Engine, resembling an article of furniture, in appearance, was in use in the exhibition, for watering the large trees enclosed within the building—an improved spreading jet, connected with the branch pipe, makes it applicable to garden purposes. The jet, by a simple contrivance, is spread out into a sheet of water, and in this form it was used in the Palace, throwing a stream of water to the highest trees. A very superior engine, from Canada, was exhibited, which, on trial, with the London Engines proved, as was claimed for it, that it could throw water nearly one third higher.

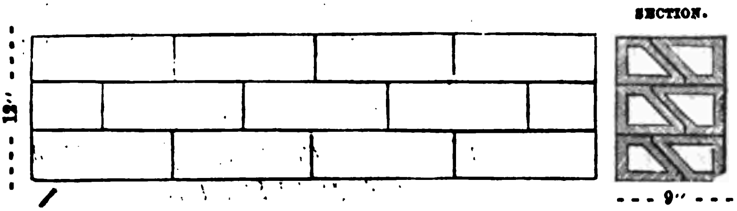
A great variety of Fire Escapes were shown—Phillips' Fire Annihilator, for extinguishing fires, by discharging incombustible gas against the flame, which is very soon extinguished, was shown. This machine was tried frequently while I was in England, and the success which attended its operation, on prepared buildings which were fired, seemed to secure the confidence of the public, so far, at least, as to satisfy them, that if the machine was at hand, when a fire commenced, it would be useful in extinguishing it. It was not pretended that it could be brought into successful use in a great conflagration, but that in the early stages of a fire, within enclosed walls, it could be made to operate with success.

There were several models for making houses fire-proof, but the most important improvement in this respect was the plan of building with hollow bricks. There were exhibitions of these brick, in both the English and French departments. Opposite the Crystal Palace a block of model houses was erected by Prince Albert, a contribution to the exhibition. The peculiarities of the building, which was designed for four families, were the exclusive use of hollow bricks for the walls and partitions and the entire absence of timber in the floors and roof, which were formed with flat arches of hollow brick-work, which was secured by wrought iron rods connected with cast iron springers resting on the external walls and binding the whole structure together. The building is thus rendered fire-proof and much more durable than if built in the ordinary manner.

The most important advantages derivable from the use of hollow bricks, are dryness and warmth, as well as economy of construction. The evils resulting from the absorption of moisture by common bricks and other porous materials are obviated and the battening of the walls is unnecessary. Hollow brick may be made with any good tile machine, in the same manner as ordinary draining pipes, and at about the same cost in proportion to the clay used. They are more compressed, require less drying, and with much less fuel are better burned than ordinary bricks, even when waste heat, or that in the upper part of the kiln only, is used.

The saving in brickwork effected by the use of the patent bricks, when made at a fair price, will be from twenty-five to thirty per cent. on their cost, with a reduction of twenty-five per cent. on the quantity of mortar, and a similar saving on the labor, when done by accustomed workmen. The process of drying is much more rapid than in common brickwork, and the smoothness of the internal surface of walls built with the patent bonded brick renders plastering, in many instances, quite unnecessary, whereby a further saving is effected not only in the first cost, but also in the subsequent maintenance. If glazed on the outer face, as may be done with many clays, a superior finished surface is obtainable without plaster.

The annexed elevation and section show a wall nine inches thick; the same principle, with some variation in the form of the internal bricks, will apply to any thickness of wall.



The dimensions of the bricks being unlimited, a size has been chosen which, with the omission of the headers, reduces, by about one-third, the number of joints, and greatly improves the appearance of the work, giving it more boldness of effect and resemblance to stone than that of ordinary brickwork—twelve inches in length, including the joints, three courses rises one foot in height; a size equally convenient for the workmen in the manufacture, and the use of the bricks—whilst less liable to damage in moving than bricks of larger size, their form admits of ready handling and stowage for transport.

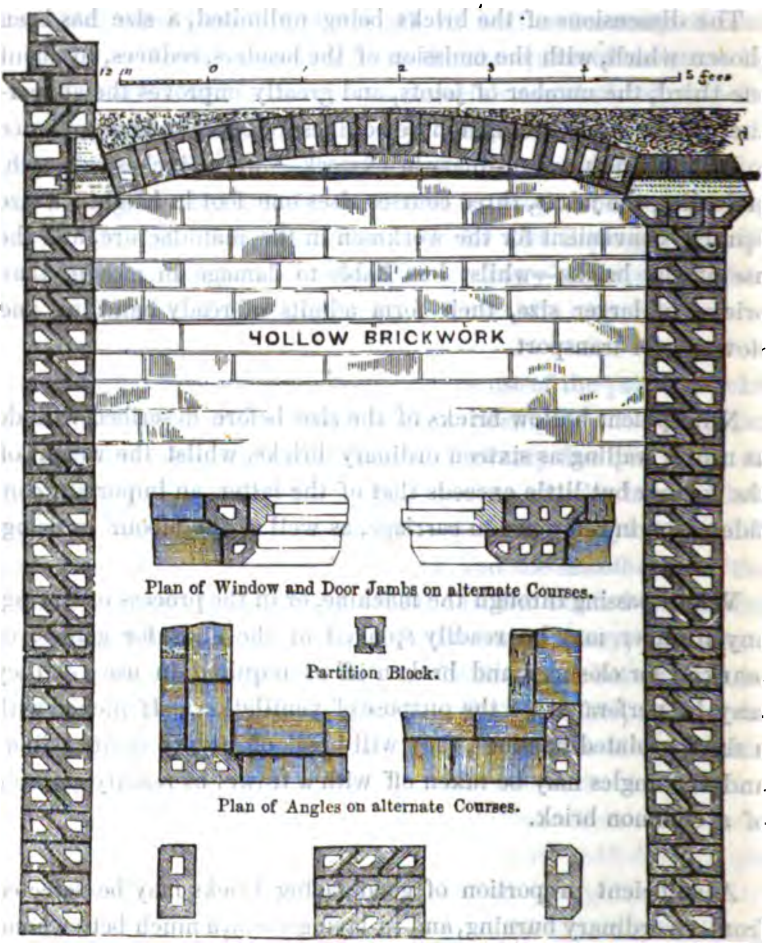
Nine patent hollow bricks of the size before described will do as much walling as sixteen ordinary bricks, whilst the weight of the former but little exceeds that of the latter, an important consideration in reference to carriage, as well as the labour in using.

When passing through the machine, or in the process of drying, any number may be readily splayed at the ends for gables, or marked for closures, and broken off as required in use; or they may be perforated for the purpose of ventilation. If nicked with a sharp-pointed hammer, they will break off at any desired line; and the angles may be taken off with a trowel as readily as those of a common brick.

A sufficient proportion of good facing bricks may be selected from an ordinary burning, and in laying them, a much better bond will be obtained than is usually given in common brickwork.

The bricks for the quoins and jambs may be made either solid or perforated; and with perpendicular holes, either circular, square, or octagonal, those in the quoins may be so arranged as to serve for ventilating shafts. Stone will be found equally applicable for the quoins and jambs, and the appearance of the work be thereby improved.

Illustrative Example of Hollow Brick Construction, as exhibited in one compartment of the Model Structure.


12 in 0 1 2 3 4 5 Feet
HOLLOW BRICKWORK
Plan of Window and Door Jambs on alternate Courses.
Partition Block.
Plan of Angles on alternate Courses.

Square Jamb and Chimney Brick. **Section of a 1ft. 2in. Wall.** **Internal door and Chimney Brick.**

The above section is also illustrative of the construction adopted in H.R.H. Prince Albert's Model Houses. The span of the arches being increased over the Living Rooms to 10 feet 4 inches, with a proportionate addition to their rise. The external springers are of cast iron, with brick cores, connected by wrought iron tie rods.

The French hollow brick, which were made in the Palace by their brick machine, constructed after the plan, somewhat of the tile machines, were different in form from the English. They are about 5 inches by 6, with square holes through the brick. They are much stronger than the English. When put under pressure, it required about one-third more pressure to crush the French brick, than it did the English. The expense of manufacture is about the same. It is said, that in some late excavations in England, hollow brick have been found among the Roman remains in good preservation, and portions of wall joined together not materially different from those of the present day.

From the observation I was enabled to make in relation to this improvement, it seems to me one of great practical importance, and which can be readily introduced into this country, and is certainly of as much importance to us as to any other nation.*

Compressed Tree-nails for Railroads.—In this class, Ransom and May, of Ipswich, England, exhibited patent compressed tree-nails and wedges for railways, for which a Medal was awarded. This is a very valuable improvement, and is being very generally introduced upon the Railroads in Europe, more than 2,000 miles being laid with them, and would doubtless prove equally advantageous in this country. A railway chair, as it is called, in which the rails rest, of cast iron, of from 20 to 40 lbs. weight, is secured ers of wood by compressed tree-nails. These latter are cylinders of dry oak, compressed by forcing them into iron molds with a conical orifice; whilst in the mold, steam heat is applied, and the whole afterwards allowed to cool; the wood is afterwards forced out, and is then a cylinder of 1⅛ inch drum for 4½ inches of its length, and conical for 1½ inches more. These tree-nails or pins are used for nailing the chairs to the sleepers; and as they swell with the moisture of the earth, they form a tight but slightly elastic fastening; and railways thus fastened are smoother than those in which metal fastenings are used.

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*Note.—Since this report was prepared, I have been informed that arrangements are already making for the introduction of hollow brick in this State. Mr. Joseph E. Holmes, of Fishkill Landing, who was at the World's Fair as the representative of Dicks' Anti Friction Presses, and a most intelligent and observing mechanic, has since his return, in connection with Mr. F. B. Taylor, invented machinery for the manufacture of hollow brick for building purposes. I am rejoiced at this, and cannot doubt Mr. Holmes' success.

E.—1852.

The Great Hydraulic or Brittania Press, part of the great hydraulic apparatus with which the Brittania bridge over the Menai Straits was elevated, was on exhibition—said to be the most powerful ever constructed. The greatest weight lifted by the press at the bridge, was 1,144 tons—the quantity of water used for each six feet lift, 81½ gallons. The Engineer, Mr. Edwin Clark, in his work on the Brittania and Conway Bridges, says, that "the pressure at three tons per circular inch equals 3,819 tons per square inch, which would raise a column of water 5.41 miles in height: this pressure would, therefore, be sufficient to throw a column of water over the highest mountains on the globe."

A Centrifugal Pump, called Appold's, was awarded a Council Medal. It was of great simplicity, and performed its work with a rapidity and power that was astonishing.

The principle is thus illustrated:

"By means of a little wheel 12 inches in diameter, and 3 inches in width, with twisted apertures, radiating from an open central space, there was made to rise to the roof of the department where the pump was in operation, a mass of water, which produced a broad and continuous waterfall, sufficient to turn a powerful water wheel. The wheel was driven by an oscillating engine of the requisite power to produce the rapid revolution in the little wheel which did the work. The wheel itself contained one single gallon than 1,800 gallons in the course of that time, so that it must have been filled and emptied about three times in the course of every revolution. In fact, the disc once under water, when it worked, may be said to carry the water through its apertures, in continued streams or threads, or more properly, *cables* of water, forced out at several spaces by the centrifugal power of its rapid rotation. The main use of this invention was for the purpose of draining fen or marshy land, for which it must prove of great value. J. Stuart Gwynne, of New-York, exhibited his Centrifugal pump, which he claimed was equal, if not superior to Appold's. His pump was received with great favor by practical men, and Mr. Gwynne has commenced their manufacture in England, and with every prospect of success. Its great simplicity as well as its power, certainly gave evidence of its acknowledged worth. In cases of fire, a pump on Mr. Gwynne's plan, with a discharge pipe of 9 inches in diameter, will throw 4,000 gallons per minute, and with a piston of 48 inches diameter, (the pump making 400 revolutions per minute,) the water could be raised from mines to a height of 120 feet. In mining districts, when water is required to be elevated to large heights, this pump promises many advantages over any we have seen.

CARRIAGES.—In connection with this class a sub-jury had charge of the carriages. There was a very extensive exhibition of these from various countries, illustrating the styles which pertain to each. There were several on exhibition from the United States, which were much lighter in their construction than those from other countries, especially those from England. A Prize Medal was awarded for a slide top buggy, and for a sporting wagon. Taking the whole exhibition in this sub-division together, it did not appear to be the most attractive, nor showing the progress which really has been made.

Sleighs were exhibited from Russia, Canada, United States, &c., in considerable variety, and attracted much notice from visitors, but do not appear to have received awards from the Jurors. A very neat and highly finished pony sleigh, was sent from this city by James Goold & Co., which was much admired.

CLASS 6. *Manufacturing Machines and Tools.*—This department was the most interesting and important of any portion of the machinery in the Palace, and a very large number of Council Medals were awarded—the number being twenty-two, one of which to the United States for *Dick's Anti-friction Presses*, manufactured under the direction of Joseph E. Holmes, of Fishkill Landing, Dutchess County.

The anti-friction presses are modifications of a highly ingenious arrangement of cams and levers, by which any degree of purchase may be obtained, with comparatively, the absence of friction. The principal peculiarity is the employment of pairs of eccentrics or cams, which, on being made to perform a part of a revolution, increase the distance between the centers, and exert an effort in doing so, dependent on the degree of difference between the curve of the cam and a true circle, or in other words, on the rate of increase of the radius. An advantage belonging to this description of machine is, that by modifying the curvature of the cams, the leverage can be regulated to suit the work to which the instrument is applied. Thus in compressing cotton, hay, tobacco, or any other kind of goods, an increasing leverage is requisite, so that the power increases with the resistance. This, the hydraulic press cannot do, and this machine has great advantages in this respect. It is much cheaper, lighter, and less liable to get out of order than the hydraulic press, and works with the minimum of friction, and therefore with the greatest amount of available power.

The presses of various sizes and for different purposes exhibited, excited no little interest among scientific and practical machinists, and the universal tribute to its importance, was given by the unanimous award of the Council Medal by a Jury composed of the most distinguished men from various countries. The right to use it, a patent having been obtained in England—was disposed of in London, for a very large sum of money. This improvement reflects great credit on our country—and whatever differences existed as to other articles, as to the anti-friction presses, there was but one opinion, among men competent to judge, of their great superiority.

The following flattering testimonial to the value and superiority of one of Mr. Dicks' Presses, over any in use in England for blind stamping book cases, was given during the exhibition by one of the leading houses in the trade in London:

SHOE LANE, LONDON, *August* 18, 1851.

"Dear Sir—We have now had sufficient experience in the working of your press at the Exhibition, to be able to form an estimate of its merits for blind stamping book covers, and we have no hesitation in saying, that it is vastly superior to any machine for that purpose now in use in London. We consider that it supplies a want which we have felt for some time, no improvement having been made in the machinery in use in London, for the last *twenty years*, which is now quite inadequate to the wants of the trade.

We have been working a large die in the Exhibition, with your machine, and have taken impressions at the rate of 20 per minute, or 1,200 per hour. Our own press will enable us to take only five impressions per minute, or 300 per hour; and to obtain this we require three powerful men, two to work, and the other as a relay to relieve the other two, every half hour or so. Your press being worked by steam power, we cannot draw a comparison between them as to the labor required, but our opinion is, that if your press was worked by hand, a man and boy would do more work than three men could do at our own press.

We remain, sir, yours truthfully,
LEIGHTON & HODGES."

J. E. HOLMES, ESQ.

The Jacquard loom, invented by Barlow of London, for the expeditious weaving of figured goods, received a Council Medal.

The work of this truly wonderful loom seemed to be the perfection of inventive power—and is only excelled, probably, by the Brussels carpet loom of our own countryman, Bigelow.

Hibbert, Platt & Sons, in the English department, exhibited a complete series of machines employed in the cleaning, preparation and spinning of cotton, showing the whole process to the weaving inclusive. A Council Medal was awarded.

The cotton machinery in operation was a very interesting feature in the Exhibition; and everything that relates to the advance made in this branch of industry cannot be otherwise than interesting to our country. It is the great and important manufacturing interest, which in connection with the other branches of manufactures, has given to England much of her importance and wealth. It is important to the United States, not only as regards our own manufactures, but also the supply which we are able to furnish to England in the shape of raw material. In 1849–50, the exports were $71,948,616—of which England received $46,876,098—and for the year 1851 the exports have been about $112,000,000—and probably a proportionate amount to England. A brief account, therefore, of the progress of this branch of industry, as illustrated in the exhibition, it is conceived, will not be devoid of interest.

The description of this machinery, as given by an English writer, is interesting from its history, presenting a most strange series of struggles, vicissitudes and successful results. In tracing its history, however, it is unpleasant to find those who gave birth to the first ideas of improvement, those who have real claims to originality of invention, deserted and ruined in consequence—whilst others, taking up the same ideas, with means at command, carry them to perfection and secure fortunes. But this has been ever thus, in every period of the history of the inventive portion of the world. As late as 1760, the machines used for the manufacture of cotton in England, were as simple as those used in India, of which specimens were seen in the exhibition. In 1738, the fly shuttle was contrived, which simply consisted in the weaver sending the shuttle backward and forward through the warp by means of strings in each hand. This was a great improvement, because, one man could weave cloth of such width, that previously required two persons. But this was not applied to cotton generally until 1760, having been first used in the woolen manufactures. Spinning by machinery, is said to have been invented by John Wyatt, for which a patent was taken out in 1738. Yet, Sir R. Arkwright, perfected the machine and took out a patent for his spinning machine in 1769. In 1770, the spinning Jenny was patented by Hargreaves. It is said, he obtained the idea from seeing a one thread machine overturned upon the floor, when both wheel and spindle continued to revolve. This threw the spindle from a horizontal to an upright position. He concluded that a number of threads might be spun at once, by having a number of spindles placed side by side in an upright position. The Jenny was then invented by which the roving, which is a loosely twisted thread, about the thickness of the wick of a candle is drawn out, and spun into fine yarn. In carding, the greatest improvements were perfected by Mr. Knight, in 1775

In 1776 the mule was invented by Samuel Crampton, but was not generally known until about 1785, and it was sometime before it was brought to perfection. The most successful self-acting machine in England was invented by Mr. Roberts of Manchester, in 1825.

An immense impulse was given to the cotton manufacture by the introduction of the steam engine by Bolton and Watt. Their first engine was applied to a cotton mill in 1785.

The cotton machinery in the exhibition shows the progress which has been made; the principle is not materially different, but the cotton undergoes a greater number of operations, so that the fibers may be in a better condition to undergo a more perfect process of spinning, but the machines are substantially the same except having kept pace with the improvement of mechanism, rendering the machines more perfect. From what I have seen of our cotton machinery I am satisfied that it is in every respect equal, if not superior, to that shown in the exhibition.

Woolen Machinery and Silk Machinery was exhibited in operation, most perfect of its kind, and admirably adapted to the work required.

Coining Presses.—A very ingenious coining press, acting by an eccentric, which coined at the rate of from thirty to forty pieces per minute, completing the coin and *milling the edge in letters* at one motion, was exhibited from Cologne, Germany, and received a Council Medal. In the English department one was shown which also received a Council Medal, but that only gave the impression on the face of the coin. It was, however, an improvement upon former presses, and had it not been for the German press would doubtless have been considered the most perfect of its kind.

In this class, prize medals were awarded to the United States exhibitors, Lerow& Blodget, for their Rotary Sewing Machine; C. Starr, New-York, for his Book Binding Machine; to Woodbury, Massachusetts, for his Planing Machine; to Farl & Co., for Card Clothing; Eastman's Stone Cutting Machines; Lowell Machine Shop, for a self acting Lathe and Power Loom; Hayden, for a Draining Regulator for cotton.

Fig. 1.

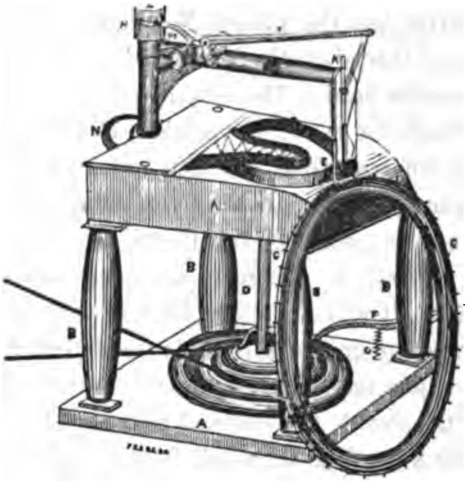
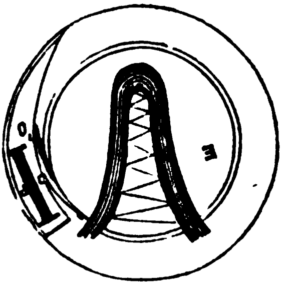


Fig. 1 is a perspective view, and fig. 2 is a plan view of the shuttle race: the same letters refer to like parts.

This machine is represented as driven by a band from a line of shafting. A is the bed-plate of the machine; B B are the posts; C C is a feed ring with fine teeth on it, to feed the cloth, to be sewn into the needle. This ring has not a horizontal motion, like the old machine, but is vertical, and much more convenient. It is moved round by a ratchet, F, which has a spring, G, attached to it. This ratchet catches into teeth on the back part of said ring C, and is operated by the revolving cam pulley driven by the band. This ratchet moves the ring so as to move the cloth forward

Fig.



every stitch length exactly. D is a vertical spindle moved by the band passing round the pulley below. This spindle drives the shuttle and operates the needle. On its top under the crown-plate, there is a pinion gearing into the pinion, N, on the needle spindle, H. M is the spool of thread on the fixed bracket; I is the needle arm, and K is the needle head. The thread will be observed passing down and through the eye of the needle, which is near the point, being thereby different from common needles; the needle is a peculiar and improved one; it has a vertical groove on both sides, running to the point, whereby the thread lies close, and forms a round needle altogether. There is a cam groove on the top of the spindle H. It will therefore be observed that, as the said spindle revolves, the groove will guide the end of the needle arm to give the needle a reciprocating up and down motion. E is the shuttle disc; the shuttle is a crooked instrument, represented by O, fig. 2; it has a spool of thread, P, in it, like a weaver's shuttle; it moves round in the outside circle, but is moved by the inside disc, E, which revolves, and there are two side springs and notches, which enable the said disc to hold on, as it were, and carry round the shuttle. When the needle goes through the cloth it carries its thread double along with it, which is slightly held by the cloth in return, and forms a loop inside, then the shuttle comes under it at that instant, passes through the loop, and thus the two threads are locked; and when the shuttle is on the opposite of the circle of its course, the needle is farthest drawn up, and this action tightens the stitch, which is then drawn tight, nearly like a saddler's. The laced work seen in figures 1 and 2 is a piece of cloth sewn on a projection for slightly resisting the motion of the shuttle thread underneath, to make it draw tight across the circle while the shuttle is passing around. It will be observed that the great space between the needle and the back spindle, allows large folds of cloth to be sewed with great facility.

Applegate's Vertical Printing Machine, which was at work during the exhibition, received a Prize Medal. This machine printed 5,000 impressions per hour. But one by the same gentleman, made for the London Times, prints 10,000 sheets per

I think, decidedly superior in work to Applegate's. Claussen's Circular Loom for Hosiery received a medal. By this loom, Hosiery and other stuffs may be woven without a seam. It was operated by very small power, and performed its work with great rapidity. It was a very ingenious invention, and certainly entitled to the award which was given.

Class 7.—*Civil Engineering, Architectural and Building Contrivances.*—This class was not very extensive. His Royal Highness Prince Albert, for his model cottage already noticed; Messrs. Fox and Henderson, and Sir Joseph Paxton for the execution and design of the Palace, were honored with Council Medals. Models of bridges were exhibited, for which medals were awarded; one for the Brittania bridge, and one for the Iron bridge Co., New-York, for a model of Ryder's patent Iron bridge. Models of ships and railways were also noticed.

In Class 8.—*Naval Architecture and Military Engineering, Ordnance, &c.*—A large number of prizes were awarded. The United States had awarded one Prize Medal to the National Institute at Washington, for models of ships of war and large merchant vessels.

A considerable number of Prize Medals were awarded for guns, rifles, &c., but strange to say, Colt's celebrated Revolvers, were only favored with an *Honorable Mention*, as appears from the returns I have. This is the more singular, when it is recollected, that the English press without an exception, so far as I am informed, gave great prominence to this most important and invaluable improvement of Mr. Colt, which has found great favor in England, and his rifles and pistols have been largely ordered for the use of the British army. There was an attempt made during the exhibition, to show, that Colt was not the inventor of the revolvers, one having been found in Paris, I believe of very ancient date. That may be so, for aught I know, but it is not the less true, that so far as giving efficiency and practicability to the invention, the world is indebted to him, and he is as truly and justly entitled to the credit of the invention, as if it had never before entered into the mind of another. Honorable Mention was also given to W. R. Palmer, for a Target Rifle, and to Robbins & Lawrence for Military Rifles.

There was awarded a Prize Medal, for specimens showing the advantages of *Marine glue*, as a substitute for pitch, and for other purposes connected with ship building, the invention of an English exhibitor. This appeared a very valuable invention. There was exhibited the piece of a mast of a vessel, which had been joined by this glue, which was inseparable by the wedge, driven with all the power that could be applied. Another piece tested by the Hydraulic press, 22 tons power required to move one splinter, but the joints remained perfect, giving an additional strength, dispersed over the surface of the main-mast of a first rate man of war, of 3,000 tons and upwards. Its use also for securing the joints between the planks forming the floors and decks of ships, is invaluable. The advantages over pitch were fully illustrated, by the exhibition of two seams, one payed with glue, the other with pitch, exposed to the same temperature in a tropical climate. There were a variety of samples in various forms where this had been used, which showed clearly its great value.

YACHTS.—In this class were exhibited models of the Yachts belonging to the Royal Thames Yatch Club—and others, by the builders and designers. It would have added greatly to the interest and usefulness of the exhibition in this class, if the model of Steers "America" had been exhibited, especially after the match at Cowes had attracted so much attention, and caused multitudes to visit her for the purpose of ascertaining the peculiarities which had enabled her to vanquish the most celebrated Yachts of the Kingdom.

The designs of Life Boats which had been procured by the Duke of Northumberland, showed some very excellent ones—and in the severe gales which have prevailed on the English coast during the ety of their selections.

Class 9. *Agricultural Implements and Tools.*—There was probably no department in the Exhibition which illustrated, in a more striking manner, its true object "that of showing the point of developments which the nations of the world have reached, in the great task of subduing nature to their use," than that devoted to the display of Agricultural Implements. The bringing together of the Agricultural Implements and products of all countries cannot be otherwise than productive of mutual benefit to all, enabling a comparison to be made of those adapted to each particular location, and thus the careful examiner was placed in a position to ascertain and learn, during the exhibition, that which would require years of travel to obtain as satisfactorily. In the English department, there was a most perfect exhibition of implements of husbandry. "But in passing from this area, filled with the results of human ingenuity and the skill of the mechanician and engineer, to the compartments of India and other less favored countries, contrasting their rude implements of husbandry, with theirs—and perhaps in no department of the exhibition will a more striking lesson be conveyed, or the progress of the human race more completely demonstrated."

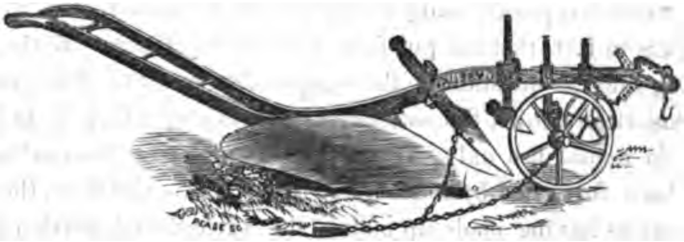
"In the Indian compartment are to be seen models of the old plow, fashioned in the same rude manner as it was centuries since, with the driver standing upon the frame work; the oxen are yoked in the same ancient style as when Elisha was seen "plowing with twelve yoke of oxen," or as when, in the time of Samuel, "an half acre" was considered as much as a pair of oxen could plow in a day.

We there see the model of a squalid and wretched looking sower scattering and wasting the seed; and the hoofs of oxen tread out the grain after the same fashion as existed centuries ago—while in England and the United States, the steam engines, improved drills, horse hoes, and thrashing machines perform the work which is badly and tardily accomplished by the Indian peasant. The exhibition shows that, in matters of husbandry, the vast majority of the natives of the Indian empire are stationary, while Great Britain and the United States of America, on the other hand, indicate the most striking improvement in this respect. "The same remark applies, but in a more qualified manner, to most of the continental states of Europe; they have advanced beyond the rude and earlier stages, but it is not too much to say, judging from their display at the exhibition, that they are still much in arrear. There is probably no implement which has received a greater amount of attention on the part of the implement makers, than the plow. During the last twenty or thirty years, the improvements which have taken place, have been of the most extensive and practical character; a circumstance which is no doubt mainly attributable to the impulse which has been given by the practical tests to which they have been frequently submitted, before practical judges at Agricultural exhibitions, for the purpose of ascertaining which peculiar construction of plow did its work in the best manner, and at the least expenditure of labor and money. To the solution of these questions the most eminent agricultural engineers have devoted their time and attention, and, as the display of this kind of instrument proves, with very great success.

The English Plows which received the prizes from the Jurors were made principally of wrought iron, and did excellent work. They were most of them, however, complicated and very expensive, and one of the greatest merits claimed for some of them on exhibition was, that they were *now* so constructed that a plowman "could remove or replace the irons, subject to wear and breakage in the field, *without the assistance* of a mechanic." Nothing can, more forcibly than this, show the main objections to the English Implements. They were most admirably got up, highly finished, well calculated to do their work, but were in most cases too complicated to be managed by an ordinary laborer; and connected with this was, the price of most of them, far beyond the means of ordinary farmers. The outlay for a complete sett of ble in any case; and most of which might be obviated by more simply arranged implements, equally effective.

In regard to the merits of the English implements which were tried in the month of April, previous to my arrival and before the exhibition opened, I of course have no means of judging from the trial itself; but the sub-Jurors who made the trial, were gentlemen familiar with the English implements and the wants of the English farmer, and selected from those on trial such as they deemed best adapted for general use in that country, and from such opportunities as I had to ascertain their merits, I have no doubt they judged wisely.

I give the cut of Busby's plow, which was decided by the English Jurors as being the best of their plows, and was included, with other implements exhibited by him, in the Council Medal award. To no other plow from England was this distinction given. This plow is a very good representation of the plows shown and for which prizes were awarded. The price of this plow is £4,10.0—about $21.60.



The following remarks from an English Journal, in review of the plows on exhibition, are far more just than the notices usually taken of the foreign contributions, and I give it entire, as in the main, the subject is treated with great fairness, and with a commendable regard to the merits of American implements.

"In the Zollverein, Dr. C. Sprenger and M. H. Hartman exhibited ten interesting models of German Agriculture, several of which are novel in their character. Among them are, the model of a plow with sixteen shares; a sub-soil plow, adapted for plowing from 18 to 22 inches; a Pomeranian fan plow, and a Belgian plow. A model of an apparently good implement is shown by the Agricultural Society of Darmstadt. The Belgian plows displayed, appear somewhat heavy, they are strongly and stoutly made, but show a want of finish.

"Several plows are shown in the Austrian department, from the manufactory of Agricultural implements of Prince F. Von Lobkowitz, which are stated to be the inventions of the Chevalier Von Infield, the manager of the works; many parts of the implements appear open to grave objections, while in several instances undoubted improvements might be pointed out. In the absence of any data, however, we are unable to form any opinion upon their merits; as a whole, they do not tend to convey a very good opinion of the state of Agricultural mechanism in Austria. (On a subsequent trial of these plows, they were found to be very defective in their work.)

"On the foreign side, the department which makes the best show of plows, is that occupied by the United States; and the implements exhibited possess many strong points of contrast, even with all others in fact, that are put forward for competition. Without entering into the question of the comparative merit of European and American plows, the satisfactory solution of which is to be found in actual use only, we will briefly describe those which have been furnished by Boston and New-York exhibitors, these two sections having made up mainly the Agricultural portion of the United States division of the exhibition.

"These plows are made from patterns of peculiar construction, and are of great variety in size, form, fixture, and adaptation to different conditions of soil and modes of culture. The wood part of these implements is in most cases made by machinery, and can be readily taken apart for repairs, or put up for conveyance to distant parts. The timber is, in nearly all cases, a second growth an admixture of several kinds, producing a metal of greater strength and durability than the ordinary iron, and which will endure the chilling process, applied to the point of the share and the base of the landside, with safety. The mold board, land-side and point of some of these plows are ground and polished, and coated with blue varnish, making them resemble blue steel, to prevent rusting. They are also better fitted for adhesive soils by this process, the dirt being prevented from sticking upon them, and impeding their progress.

“Among the plows exhibited, are the root-breaker, sward, stubble, center-draught, corn, double mould board, ditching, side-hill, &c., &c. They are of various sizes, and are calculated for all kinds of soils. Some are intended to have the common, some the Scotch clevis; some have the draught-rod, and others the crane clevis attached, so that the team can walk on the sward instead of a wet furrow, or so that the plow can run close by the side of a fence or ditch. The advantages claimed for many of these plows are, that they are smoother and better made, and more durable and cheaper than the common plow in use; that they work much more effectually, cutting a deeper, wider, more even and truer furrow: and that they will do their work with less expenditure of team power. They will also pulverize the earth as they lift and turn it over, thus effecting that minute and general separation of the particles of the soil, which is so essential in preparing it for the ready admission of the rootlets of the plants, and enabling them to draw their food from every portion of it.

One principle alluded to above, in these plows, is too important to be passed lightly over. From the complicated structure of the plow, and the manner in which the draught must be applied to it, many misconceptions have arisen as to the true operation, and proper application of this draught. Too little is understood of the principle involved in this, to enable the plowman to attach his team and arrange his clevis so that the instrument shall do its work, with the least force and power. The draught is not the end in view, but merely the means by which the end is accomplished—the former being made to subserve the latter; so that if it be not rightly applied, good work can not easily be done. If, for example, the plow inclines out of the ground too much, or takes too wide or too narrow a furrow slice—both evils usually arising from a wrong application of the draught—the plowman must exert a force to direct it properly, in addition to that which is required to overcome the inequalities of the soil; while, on the contrary, if the draught be rightly applied, the plow will move so accurately as not only to perform good work, with more ease to both plowman and team, but in soil free from obstruction, even without being guided. This application of the draught to the plow, is claimed to be superior in the American plows to that in any others. This claim of superiority can be easily tested by the application of the dynamometer—an instrument made for measuring the amount of power employed; and we understand that the exhibitors are willing for a trial of competition whenever this shall be allowed, as one of the elements of excellence. In a recent and carefully conducted trial in the United States, upon the merits of plows, it was found that a difference of power even among the best and most modern inventions existed to the extent of more than one sixth—that is, as 412 lbs. to 596 lbs.*

"The American Side-Hill, or "Starbuck" plows we understand, are being used here with much acceptance. They are so constructed that the mold-board can be instantly changed from one side to the other, which enables the plowman to perform the work horizontally upon side-hills, going back and forth on the same side, and turning all the furrow slices, with great accuracy downwards. They are employed also for level plowing, as the work leaves the field without any center-dead or finishing furrow, and without the banks or ridges from turning two furrows towards each other. They also save labor by allowing the team to turn short about at the end of the furrow instead of obliging it to travel across the wide ends of each land in the field. For plowing down the banks of ditches they are the only plow that will turn the furrows from the ditch, thus carrying the earth upon the level ground.

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* Note.—In the trial had in this State in June, 1850, on stiff clay soil, the furrow 7 inches deep by 10 inches wide—the difference was from 380 lbs. to 550 lbs.

"Although the number of each kind of agricultural implements exhibited from the United States is small, the variety is very considerable. The remaining specimens include harrows, rakes, hoes, potatoe hooks, (a good invention to save the potatoe from injury in uncovering the soil,) scythes, forks, shovels, spades, fanning mills, (one especially of a new and valuable kind,) grain reapers, mowing machines, seed-sowers, axes, &c. Of the latter article, as we should expect from a country where a skill is obtained in the felling of trees by the backwoodsman which is unknown elsewhere, there is an excellent contribution, formed and finished with a degree of perfection which leaves the Americans nothing to learn in this portion of their business and little to fear from competition."

By an arrangement of the Royal Commissioners with the Royal Agricultural Society of England the trial of agricultural implements was put in charge of a Jury, appointed or nominated by them, and the trial took place in the month of April, *before* the exhibition was opened and before many of the implements had reached London. Why this was so arranged I did not learn.

The gentleman who at that time had charge of the United States department very properly declined having our implements tried, as there were no persons present representing them or who were familiar with their use. The trial at this time, only included the English implements and a few from Belgium.

Trial of Plows at Hounslow.—Some time after the exhibition was opened, and after the awards on the English implements had been made by the Jury, application was made by Jurors of three foreign powers: Barron Mertens de Ostin of Belgium, Prof. Moll of France, and B. P. Johnson, United States, for a trial of the foreign plows with the English prize plows, the draught to be tested by the Dynamometer. This application was successful, so far as a trial was concerned. The plows of each nation were judged separately, and an opportunity was thus afforded those present to compare the work of the several plows, and form their own opinions in relation to their merits. The trial of the plows from France, United States, Belgium, Canada, Germany, Bohemia and Austria, together with the English plows, was had at Hounslow, a few miles from London, on the 19th of July. There were twenty-one plows tried from foreign countries and five English plows, one more than those to which the prize had been awarded, belonging to Ransoms & May, of Ipswich, which, not being entered in time for the first trial, was then excluded.

As the chairman of the Jury, Hon. Mr. Pusey, was not present at the trial at Hounslow, and has not alluded to it particularly, in his report, it may not be deemed inappropriate to give a somewhat full account of the trial.

From my notes, taken at the time of the trial, I give the order in which the plows were tried and the impression made as to the work of each, and the awards of the Jurors.

No. 1—French plow, with large wheels nearly as large as the fore-wheels of a wagon, with a single short handle. This plow worked badly, was very difficult to manage, and although the patentee of the plow was present, he found it extremely difficult to keep it in the ground. It operated without a person to hold, being governed by the wheels. It was adjudged as of little value.

No. 2—Starbuck's plow No. 6. Troy, N. Y. This plow cut the requisite depth with a good sole to the furrow; but the furrow slice was wider than that required; in every other respect, the work was well done.

No. 3—Prouty & Mears, No. 40, Boston Center Draught. This plow worked well in every respect, and turned a good furrow slice, though the English Jurors thought it did not lay the slice flat enough; but in the kind of soil in which the trial was made, the breaking of the furrow slice and thus pulverizing the soil, was a decided advantage.

No. 4—Talbot's French Plow, with wheels. This operated better than No. 1, and did good work; it was rather too complicated, though an arrangement by which the fore carriage was raised or lowered without stopping the plow, was convenient. No. 5—Another French plow, very indifferent and was rejected.

No. 6—Rogers' Cast-steel American Plow. This worked indifferently and could not be brought within the requirements.

No. 7.—Starbuck's Troy No. 4 with coulter on share. This plow was without a wheel; it performed its work well, was of very light draught. The bottom of the furrow not quite as even as No. 2.

No. 8.—A Belgian plow, which was very rudely made and worked very indifferently, was rejected.

No. 9—A. B. Allen & Co. of New-York, plow No. 20. This plow worked well, cut a good furrow, though wider than the requirement.

No. 10.—Belgian Plow. This was a short plow, that did good work and was of very light draught.

No. 11.—Canada Cast Iron Plow. This was an Iron Beam Plow, very short—its work did not answer the requirements. No. 12, Flecks Wilkie Scotch Plow, from Montreal. This plow did good *Scotch* work—but as the sole of the furrow was uneven, the Jurors did not approve of the manner in which its work was performed.

No. 13.—Another Belgian Plow, very defective in its work. No. 14.—A Belgian Turn-Wrest Plow, governed by a spring on the top of the beam, so that it could be very easily turned by the holder, while the team was coming about. The mold-board was convex. It did very good work, and its draught was light.

No. 15.—French Plow very indifferent, and work badly done.

No. 16.—A Belgian Plow, tried in April, and on this trial performed very well—the draught light. No. 17.—Belgian—similar somewhat to No. 14, but not as good.

No. 18.—Plow from Netherlands—very plain in its appearance, but operated remarkably well. Its furrow was quite equal to any tried. Its draught light, and the plow very easy to hold.

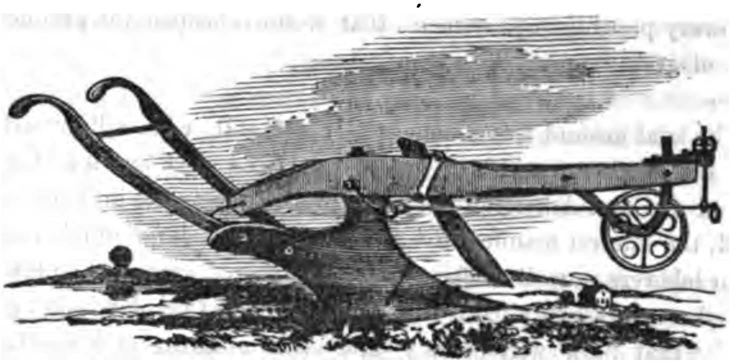
No. 19.—Bohemian Plow.—This plow had a square sheet iron mold board—could only be worked in very light sandy soils—and entirely failed in the trial.

No. 20 and 21.—Austrian Plows—very defective, and their work bad—rejected.

The English plows tried, were Busby's two or four horse; Howard's XX; Ball's; Hensman & Sons' four horse; and Ransoms' Plow. These all laid their furrow slice with great neatness, almost entirely unbroken, the teams guided by two men, generally at the very slowest pace.

The Jurors present at the trial, consisted of Captain Shelly, Mr. Miles, and Mr. Hammond, English Jurors; Baron Mertens d'Ostins, Belgium; Professor T. Moll, France; B. P. Johnson, United States. The Jurors awarded a Prize Medal to Prouty & Mears, U. S. Center Draught Plow; No. 4, Talbot Brothers, French No. 18, Jenkin, Netherlands; No. 10, Delstanche, Belgian plow. The awards were made, without reference to the comparative merits of the plows of the different nations, which were tried

Prouty & Mears' Plow, No. 40. Price $12.50.



Previous to the trial of our implements, a very erroneous idea generally prevailed among those who visited the Exhibition, as to what they could perform. They were so different from the English plows, so light in their structure, and so much shorter, the impression was very general, that they would not succeed. The following description of our plows, as compared with the English implements was given during the Exhibition, in the leading Agricultural Monthly Magazine published in England.

After describing the defects of the implements exhibited from the Continent, the writer remarks, "This is also particulary noticeable in the American plows, which with the *exception* of the varnish and high finish, reminded us of the prints in agricultural works intended to represent plows that were used *several hundred years ago*. They also show us that the Americans must have a very friable soil to cultivate, or that their tillage operations are executed in a very imperfect manner."

It was under all these disadvantages that the trial was had; but the result proved, that what had been affirmed by us of our plows, was practically demonstrated to be true. There were present at the trial, a large number of practical farmers and land proprietors who felt a deep interest in the result; for if the American plows succeeded—their cheapness, as well as lightness and diminished draught—were objects of no small moment to the English farmer, struggling with exorbitant rents, taxes, and poor rates, as well as with the foreign competition induced by Free Trade, which called for every possible improvement that would cheapen the production of grain crops.

The trial ground was a moderately stiff soil, with a light sod, and the depth and width of furrow was fixed at 6 and 9 inches. When the first American plow was brought on to the ground for trial, the interest manifested was very great. A large number of farm laborers as well as farmers were gathered around the plow, and the expressions I heard from many were—"that plow won't go in;" "that plow will break;" and other remarks of a similar character. I had an American with me to hold the plow—but the gentleman upon whose land the trial was made, advised that his plowman who was well versed in his work, should hold the first one—and I consented. The plow was set to the required depth and width, as near as it could be done, and the team started. The plowman, unused to the plow, pressing his whole weight upon the handles, *to keep it in*, was desired to let the plow take its own course, merely steadying it, and it went through its work with great ease, both to the plowman and team. As we returned to the starting point, it was settled that our plow *would do its work.*

We tried several American plows: Starbuck's, of Troy; Prouty & Mears', of Boston; Allens', of New-York, and one from Philadelphia. The work was well done, the sole of the furrow was as well finished as by any plow upon the ground and the only objection made by the Jurors, to the work of our plows was, that the furrow slice was broken too much. It was evident to those familiar with plowing such soil, that this was an advantage in favor of our plows, as a stiff soil needed to be broken to prepare it for the seed, and if not done by the plow, it would require much more labor with the harrow or cultivator to prepare it; and this was sustained by the judgment of practical farmers on the gound, whose attention was particularly called to the work done by our plows and who admitted that it could be prepared for the seed at much less expense and labor, than when the furrow slice was laid over smoothly and unbroken.

shire, who has had in use upon his farm American plows, for several years, published an article soon after the trial of plows at Hounslow, upon the proper manner of plowing, in which he strikingly exhibits the difference between the English and American plows, and the superiority of the manner in which our plows do their work, breaking in pieces the furrow slices, as he suggests it should be done.

Mr. Love remarks—"If it be the fact that the primary object of cultivation for the production of the various agricultural crops is a well pulverized soil and porous subsoil, then the farmer ought to draw out the ingenuity of our agricultural mechanics, by giving prizes for those plows that will invert and break in pieces the soil without smearing the under strata, and most effectually pulverize the greatest quantity of land a given depth with the least amount of power, instead, as the present practice is by all our agricultural societies, awarding prizes to those plows that cut out a furrow with all three of its cut sides well smoothed and smeared up, and turned over in as unbroken a state as possible, so that it will shine from one end to the other like a well moulded piece of concrete, and the bottom of the furrow well polished over by the friction of the broad-soled land-side and wrest, thus rendering the under strata almost impervious either to air or water; indeed, it is no uncommon thing to see land that has been well drained, as well as that which is naturally dry, dressed up in a suit of corduroy, so as to leave the furrows frequent enough to allow the rain that falls to fertilize the earth, an opportunity of washing away all the virtues of the manure that has been applied, to the nearest river.

"If we could have a plow so made that it would, in the act of inverting the furrow slice, break it into pieces, and pass over the bottom of the furrow without the friction of any smooth surface of iron or other material being drawn over, closing up all the pores and fissures in the under strata, I think there is little doubt that such a plow's cultivation would approach, when performed at equal depths, fork cultivation.

"Let all farmers of those countries who go to the Great Exhibition unprejudicially, look carefully into the merits and demerits of the various plows used in these and other nations, and inquire why there are such differences in the conformation of the different parts, of, not only the plows used in the different districts of these countries, but in those of other nations, where there are, I may say daily, some of our practical farmers settling; and yet they adopt the use of the plows of that country, and we know by experience that in the majority of instances of farmers leaving one county for another, in these countries, they take their plows with them, and, in not a few cases, they are found superior to those in general use in that locality. It would appear that these foreign plows are so constructed that they can plow up the prejudices of our brother farmers, (who have been obliged to depart with the wreck of their fortunes to the Far West, after experiencing some severe lessons in the school of economy,) or else we would have many instances of some of them sending here for plows and using them after they are taken there; but "it is a well known fact that those who take plows with them in but few cases use them at all; and if used, it is but for a very short time, as the comparative merits of the state of the land at sowing-day satisfies the prejudices against those plows used in the new country. And after a few weeks' growth of the crop, the most prejudiced are convinced by the superior appearance in the more full development of crop, especially in a dry season." This I received in answer to a letter written to a brother who is in the Far West and who was a prize plowman before he went there and who was one of the great promoters of the fine, clean, well-smoothed-up furrow slice system."

These very judicious remarks of Mr. Love show the difference between our system of plowing and the English, and the advantages which would result from the use of our plows; and which was evident at the trial, so far as the pulverization of the soil and a porous subsoil was concerned.

But a most satisfactory evidence of the adaptation of our plows to the work required there, resulted from a trial of one of Star-same width and depth of furrow, as was required on the trial. An English farmer made the trial himself. The plow was drawn by one of the large English farm horses, with entire ease, and when he had plowed so as to satisfy all present, that one horse would do the work, even in soil of the kind we were engaged in at the trial, it was remarked by many of the persons present, that "that is the plow the English farmer wants." This plow was sold on the ground, and ten more were ordered in the very same neighborhood, and a very large number have since been sent to England as well as the Continent, "as the American plows found great favor among the English farmers, on account of their extraordinary cheapness and lightness of draught."

Owing to the weather, which was very soft, the rain falling most of the time, the plows were not tested by the Dynamometer until a subsequent day, and the following is the statement of the trial, reported by Baron Mertens, on behalf of the Sub-jury, consisting of Baron Mertens, Col. Challoner and B. P. Johnson:

Plows.	Name.	Points of resistance.	Remarks.
1. Belgian,	Odeurs,	527	Land very hard going up hill, coming down in Balls furrow.
2. American,	Hall & Spears,	530	Land hard.
3. English,	Busby,	540	Land worked well.
4. French,	Bodin,	546½	
5. Holland,	Jenken,	550½	
6. Belgian,	Delstanche,	568	No plowman to use this well.
7. English,	Howard,	569	Hard land.
8. American,	Prouty&Mears	579	"
9. French,	Talbot,	580	"
10. English,	Ball,	646	Very hard ground; very good furrow.
11. do	Ransoms&May	659	Very hard piece of land.

The ground on which the trial was had was very hard and stubborn, and the average power of draught was high.

It may not be uninteresting to give the opinions of the English farmers as to our plows *after* they had been tried, and in use in England, which appeared, since the exhibition, in the proceedings of a farmers' club, in the very *same* journal which had said "that they reminded them of the prints of plows that were used several hundred years ago." The subject for discussion before the Torrington Farmers' Club was "Agricultural Implements and Horses." In the course of the discussion the heavy implements, carts, &c., in use in England, were the subjects of remark, and one gentleman, Mr. Lear, said, as in contrast to their heavy implements: "I will just draw your attention to the American plows, which perhaps most of you have seen at the exhibition. That they have been pretty well ridiculed, I know; but that does not detract at all from their value; and I am inclined to think that they are well adapted for the work they are intended for. The turn-furrow is exceedingly well shaped, and in fact it is a business looking thing altogether." Another gentleman, Mr. Battock, says: "Mr. Lear had spoken of the American plow seen at the exhibition, but if they had any inclination to inspect one of these plows they might see one at Maj. Sandham's brick yard, and also some work it had performed. He (Mr. B.) was perfectly satisfied of its usefulness on light soils for preparing the Barley and Turnip season. It required but one horse to draw it! (Hear, hear. That's the sort we want.) He was aware this could not be done on heavy stubborn land, (with one horse,) but for the purpose he had mentioned it appeared to him an excellent article."

Reaping Machines.—The favorable results of the trial of the plows, called more especially the attention of the public who visited the exhibition, to the value of the American Implements. On the return of the plows to the Palace, the one upon which the award was placed, as well as the others, excited much interest, and the reaping machines, which were soon to be tried, excited far more attention than before. The impression now seemed to prevail that these American Implements *may*, after all, do what has been promised.

of the plows came that of the Reapers, on the 24th of July. There were three machines on exhibition. McCormick's Virginia Reaper, Hussey's American Reaper, and an English Reaper, made after Hussey's, but which, I believe, had not been tried. The place selected for trial was at Tip-tree Hall, Kelvedon, Essex, the farm of Mr. J. J. Mechi, about forty-five miles from town. The day selected was the annual gathering of gentlemen at the farm of Mr. Mechi to inspect his crops and method of farming, which is exciting much interest in England. The day proved a very unfavorable one, as it rained during the whole day. The wheat upon which the trial was to be made was quite green and remarkably heavy, and everything as unfavorable as could well be. There were from 150 to 200 gentlemen present, many of whom had come upwards of 300 miles to witness the trial.

The Sub-jury assigned to conduct the trial was composed of Colonel Challoner, one of the English Jurors, Baron Merten d'Ostins, of Belgium, and B. P. Johnson, United States, and W. Fisher Hobbs, Esq., though not a member of the Jury, was present by invitation, at the trial. The first machine tried was Hussey's, which did not succeed, as it clogged very soon, and passed over the grain without cutting it. After this had been tried two or three times and failed, it was proposed by one of the Jurors that no further trial be made by the Reapers—but it was insisted that the other American Reaper should be tried. The gentlemen present expected it, and I was not willing they should leave the ground without satisfying those present that the American Reapers would perform the work which it had been affirmed they could do. Mr. McCormick's Reaper was then brought up, managed by D. C. McKenzie, of Livingston county, in this State, who is entitled to no little credit for the successful result of the trial. This was a moment, as may well be imagined, of no ordinary interest. One reaper had not operated as was expected—another, and the only remaining American reaper to be tried, was now to be tested. The gentlemen present were anxious that something should succeed that would cheapen the gathering of their crops—but from expressions made around me, I was satisfied they had no confidence in the reaper. They said, after the first trial, "It is as we expected—they will not work until *perfected* by an English mechanic." The laboring men, too, when the first one was started, seemed perfectly astonished, fearing their vocation was gone—but when it failed to work, they brightened up and would doubtless have given vent to their feelings, if another one had not been found ready for the trial, and might succeed. It can well be imagined that the Americans, of whom only three were present, beside myself, were in quite as great a state of excitement as the others. The machine was started. After it had passed its length, the *clean path* made by the reaper—the grain falling from its side, showed that the work was done, and the reaper was successful. After proceeding as far as was deemed necessary, the team was stopped, and Mr. Mechi jumped upon the platform and said, "Gentlemen, here is a triumph for the American Reaping Machine. It has, under all its disadvantages, done its work completely. Now let us, as Englishmen, show them that we appreciate this contribution for cheapening our agriculture, and let us give the Americans three hearty English cheers." They were given, and with a fourth added, satisfying all that they were heartily given. Another trial was then had, and the reaper timed—cutting, in 70 seconds, 74 yards in length, entirely clean, and to the satisfaction of the Jurors and the gentlemen present. The Jurors recommended the award of a Medal to Mr. McCormick.

The result of this trial gave a new turn to affairs, and on the return of the Reapers to the Palace, crowds were continually examining them, and the American department from this time to the closing of the exhibition, was no longer the "Prairie ground," but was thronged with inquiring visitors. The London Times, whose Agricultural reporter was present, gave a very full account of this successful trial; and in an article published soon after the trial, it was said, "That every practical success of the season belonged to the Americans, their consignments showed poorly at first, *but came out well upon trial.*" And again, "it will be remembered that the American department was the poorest and least interesting of all foreign countries. Of late, it has justly assumed a position of the first importance, as having brought to the aid of our *distressed agriculturists*, a machine, which if it realizes the anticipations of competent judges, will *amply remunerate* England for all her outlay connected with the Great exhibition. The reaping machine from the United States is the *most valuable contribution* from abroad, to the stock of our previous knowledge, that we have yet discovered."

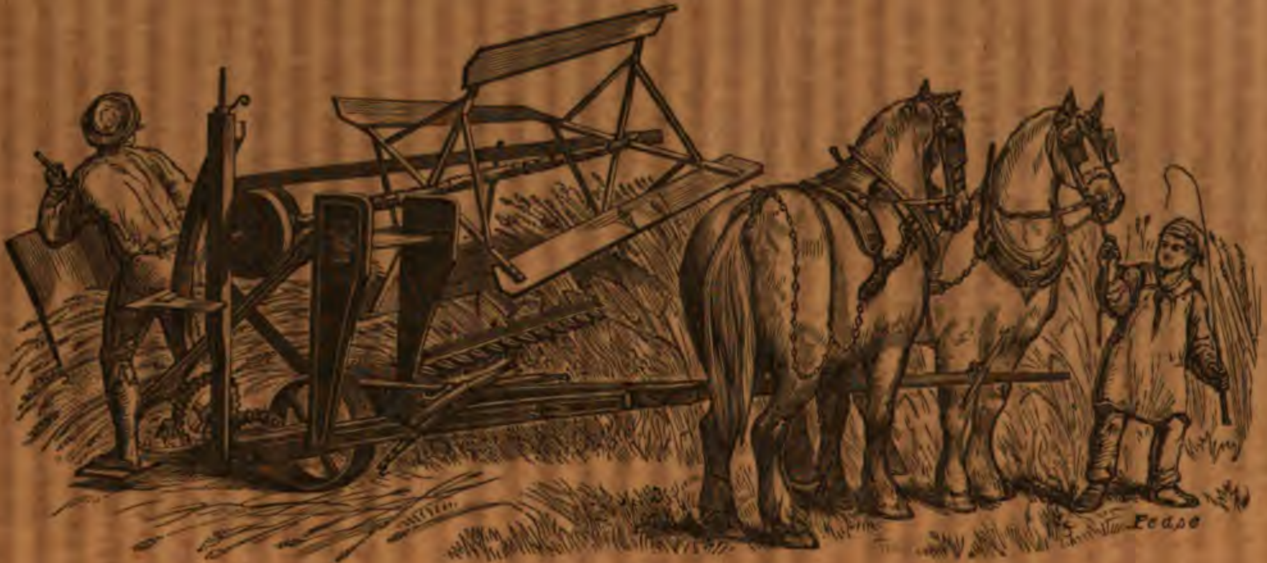
Previous to the trial of the reaper, the same observations as to the value of the reaper if successful, were made to me by several distinguished agriculturists of Great Britain. An attempt has been made since the close of the Exhibition, to show that the reaping machine is an English invention, and that those from this country are mere imitations of theirs. It requires no great sagacity however to perceive, that so far as grain reapers were a *practical reality*, they were unknown in Great Britain, until the successful trial of those from this country. For surely the London Times, ever posted up on every thing that pertains to the advance of England, would not have hazarded the assertion, "that the American Reaper will amply remunerate England for all her outlay connected with the exhibition;" if, England had anything like a *living, working reaper*, known among her distressed agriculturists. The truth is, that until the American reapers were exhibited with their improvements, reaping by machinery was not even spoken of among the agriculturists of Great Britain, so far as I had an opportunity of ascertaining. The unbelief in the success of the reapers must satisfy every one, that there was no expectation in England of a reaper to do their work unless ours succeeded. If England had a practical working reaper in use, one would have supposed that it would have been on exhibition at the Palace, and that Garret, one of the most celebrated implement makers in England, would have exhibited an English grain reaper, instead of one copied from Hussey's American reaper, and which he is now manufacturing and vending as the American Reaper.

The late Chancellor of the Exchequer, Earl Granville, one of the Royal Commissioners, who devoted himself constantly to his duties as Commissioner, and to whom the exhibition is greatly indebted for its success; in speaking of the success of the Americans at the exhibition, alludes to "two other American gentlemen, who, are at present *teaching us how to cut corn*, an act which we have been practicing for some hundreds of years in this Island, *but of which it appears, we are ignorant of the first principles.*"

Subsequent to the trial at Mr. Mechi's, another trial was had before the Chairman of the Jury, Hon. Mr. Pusey, Mr. Miles, M. P. and Baron Hlubeck, of Austria; I give the report of Mr. Pusey, the Chairman, in which it will be noticed, that he speaks of an English machine, as too intricate, and that it had fallen into disuse 50 years since.

Mr. Pusey's Report.—"At the opening of this century it was thought that a successful reaping machine had been invented, and a reward was voted by Parliament, to its author. The machine was employed here and abroad, *but from its intricacy fell into disuse.* Another has lately been devised in one of our colonies, which cuts off the heads of the corn, but leaves the straw standing, a fatal defect in an old settled country, where the growth of corn is forced by the application of dung. Our farmers may well, therefore, have been astonished by an American implement which not only reaped their wheat, but performed the work with the neatness and certainty of an old and perfect machine. Its novelty of action reminded one seeing the first engine run on the Liverpool and Manchester Railway in 1830. Its perfection depended on its being new only in England, but in America the result of repeated disappointment. untired perseverance. The United States Patent Commissioner says of Mr. McCormick's reaping machine:—

"In agriculture it is, in my view, as important, as a labor saving device, as the Spinning Jenny and Power Loom in Manufactures. It is one of those great and valuable inventions which commence a new era in the progress of improvement, and whose beneficial influence is felt in all coming time."



McCORMICK'S REAPER.

UNIV. OF MICH.

"Besides difficulties common to all inventions, the machine could be tested but for two or three weeks in each year when a defect was discovered, before the remedy was applied to the instrument the harvest was over, and the new form had to wait a whole year for its trial, when some fresh failure required a fresh year's postponement of final success.

"As to the practical working of the reaper, two horses drew it at the trial very easily round the outside of the crop until they finished in the center, showing that they could easily cut 15 acres in 10 hours. One man drives sitting and another stands on the machine to rake. It is hard work for him, and the men ought sometimes to change places. The straw left behind at the trial was cut very regularly; lower than by reaping, but higher than by fagging. The inventor stated that he had a machine which would cut it two inches lower. This is the point, I should say, to attend to, especially for autumn cleaning. Though it seems superfluous to bring this machine to the test of economy, we may estimate the present cost of cutting 15 acres of wheat, at an average of 9s. per acre, to be £6,15s. Deduct for horses and men 10s. 3d, and for binding 2s.6d per acre, the account will stand thus:

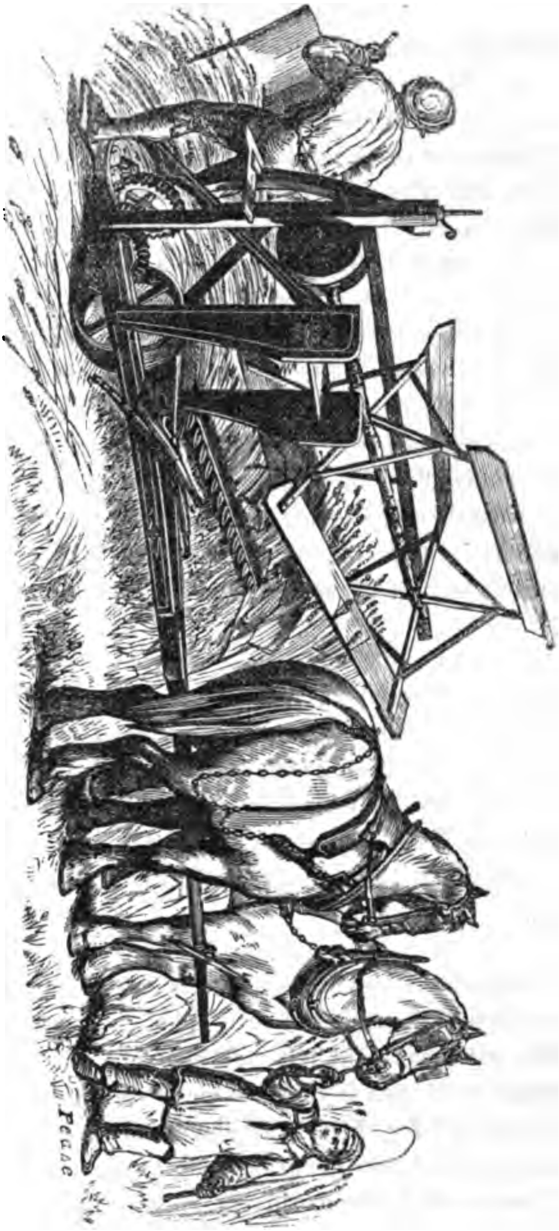
Average cost of reaping 15 acres, 9s.		£6,15.0
Horses and men for Reaper,	£0,10.0	
Binding, 15 acres, 2s.6d,	1,17.6	2,7.6
Saving per acre 5s.10d,		£4,7.6

"The saving in wages, however, would of course be an imperfect test of the reaper's merits, since in bad seasons and late districts it may often enable the farmer to save the crop.

"Since this statement was written, fresh trials have been made of Mr. McCormick's reaper, as also of one of Mr. Hussey; and as the award under the Commission has been called in question, it is right that some statement should be made on the subject. In the first trial, at Tiptree Hall, Mr. McCormick's reaper worked well" the other did not act at all. As the corn, however, was then green, it was thought right to make further trial, and special leave was obtained from the Council of Chairmen to give two Council Medals, one to each reaper, if on further trial their respective performances should be found to deserve one. The object in our second trial was not to decide which was the best implement, but whether either, or both, were sufficiently good to receive the Council Medal. Mr. McCormick's in this trial worked, as it has since worked at Cirencester College and elsewhere, to the admiration of practical farmers, and therefore received a Council Medal. Mr. Hussey's sometimes became clogged, as in the former trial at Tiptree, and therefore could not possibly obtain that distinction.

"Further trials, however, have since been made by other persons elsewhere, in which Mr. Hussey's machine worked well; and one of our colleagues, Mr. Thompson, informs me that it had been used for a week by a practical farmer, on his own farm, who was perfectly satisfied. Its inventor states that at the trials for the commission the failure arose from a mal-adjustment; and Mr. Thompson informs me that at one of the subsequent trials a similar mal-adjustment impeded its action, until Mr. Hussey arrived to set it right. I am bound, then, to express my own individual opinion that the merits of the machine are such as to entitle it to a Council Medal, and my regret that it should formally be disqualified to receive one.

"We have, then, two good American reaping machines. Their respective merits time will discover; but there is one caution which applies to the introduction of both into England. They both cut by a sidelong vibration, the frequency of which must be determined by the number of straws to be cut in passing over a given space. Now, as the acreable yield of England, is nearly double that of America, our straw, it is probable, stands much thicker than in the crops these reapers have been accustomed to deal with, so that both implements, when applied to heavy crops must be adapted to the superior farming they will have to encounter. At present we only know that McCormick's machine is best for Barley



McCormick's Reaper.

and Oats, when not intended to be bound up in sheaf; Hr
for corn laid by the weather or standing upon steep ridges.

GENERAL REMARKS.

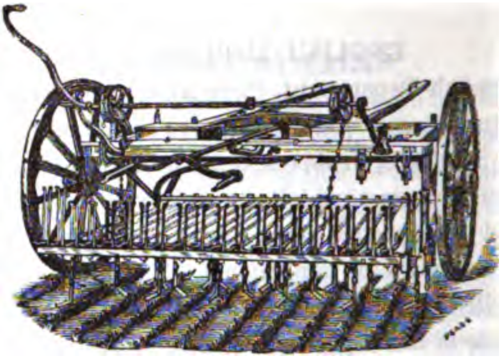
I have dwelt more at length on this class, on account of its importance, not only in the exhibition itself, but, for the reason that it was, so far as the exhibition from this country was concerned, the most important in its results. Until the trial of the American implements, and the most triumphant success of McCormick's Reaper, the United States department was comparatively overlooked. But our triumph here, gave a new direction to public attention, and that part of our exhibition which previously had been slightly passed over, now attracted the notice of every visitor, and the press of England was prompt in admitting the complete and triumphant success of the Americans. It was no longer deemed necessary to say of our implements, "they may do for a new country," for the trial had satisfied the most prejudiced, that they were designed to advance the interests of the best cultivated countries of the old world, and "taught them how to cut corn by machinery, of whose first principles it appeared they were ignorant."

The result of this trial was not unexpected to those Americans who were familiar with our implements, and to them was peculiarly gratifying, as placing our country in the position to which it was entitled and commanding that attention for our exhibition, which was justly due to it, from the character of many of our articles, particularly those in the machinery and agricultural departments.

In my account of the exhibition in this class, I have endeavored fairly to represent the merits of our implements, and am gratified that their merits were publicly admitted and acknowledged by distinguished gentlemen from every quarter of the world, and the extensive demand for them in England and upon the Continent, shows, that practical, intelligent farmers, appreciate the contributions we have made to the world's progress.

In the English Department, there were many very valuable machines and implements that would prove highly useful in this country. Their Scarifiers, Grubbers, Cultivators, and Clod Crushers, of various forms and sizes, which are greatly advantageous in bringing the land into proper tilth, and materially diminishing the expense, are very useful implements. The HORSE HOE, which is used for drilled crops, in removing the weeds and stirring up the land, is in use in many parts of England—and although at first sight it might appear doubtful whether it would answer in the young and tender crops—yet on trial, it has proved one of the most useful implements of the present day. It is adapted to all the prevailing modes of culture, either for cleaning crops drilled on a level surface, or on ridges—the axeltree of the wheels being movable at both ends, to suit the varied intervals between the rows of plants, and as each cutting hoe works on a separate and independent lever, the weeds are effectually destroyed, however uneven the surface, the hoes being kept at a uniform depth, by the means of regulating keys. The hoes penetrate to such a depth as to give fresh life and vigor to growing plants, by stirring the earth around them. It can be used for any kind of drilled crops. From ten to fifteen acres may be hoed in a day with a man, boy, and horse. Its steerage arrangement is such, as to be entirely under the control of the holder, and the hoes may be guided with the greatest precision, perfectly hoeing the intervals without injuring the plants.

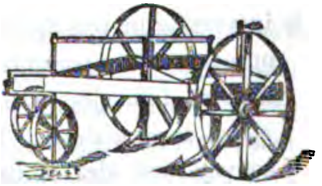
As the practice of drilling the crops is increasing in this State, it cannot be long before our farmers will appreciate the importance of extirpating the weeds—for few of our farmers, I imagine, will, for any length of time, feel that they can *afford to grow weeds*. I give a cut of this implement which will convey some idea of its construction.



Garrett's Patent Horse Hoe.

Of the Scarifiers, that called Earl Ducies Prize Drag Harrow, or Uley Scarifier and Cultivator, of which a cut is given, appears to be a very effective and highly useful implement. It has an iron frame fitted with five tines, each covering a space of eight inches, and so placed as to be two feet from each other: this, with their curved shape and length, prevents the drag clogging in the foulest weather. The points or grubbers are for breaking the land, and the broad shares for scarifying or working stubble land, with an extra set of steel shares for paring. The machine is quickly raised and lowered, by turning a handle, the axle of which has a worm fixed upon it, worked into the cranked axle of the back wheels. By simply turning the handle to the right, the drag is lifted up, and to the left let down. A dial plate indicates the number of inches in or out of the ground.

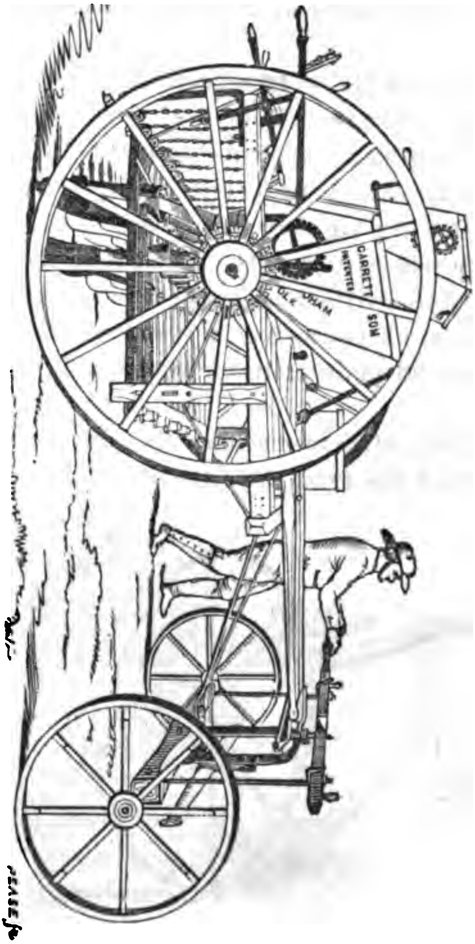
This implement is in very extensive use, and for working over stubble land, whether light or heavy land, and however full of grass or weeds, will thoroughly pulverize and clean it, and will, it is said, leave the land in a far better condition for a crop than by the ordinary method of plowing and harrowing, and with a very considerable saving of expense, performing the work of a drag and scarifier most successfully. It can be adopted here, I think, with advantage, and may be constructed at a price, probably, that will secure its introduction into practical use.



Uley Scarifier.

There were various drill machines, very perfect in their construction and arrangement, yet too complicated and expensive for introduction into this country. They do not possess any material advantages over our own drills, which are afforded at one-third the price of the best English drill.

A drill called the "SUFFOLK DRILL" which has been awarded many prizes in England, was fitted with a steerage arrangement that renders its work very perfect. A swing steerage in front guided by hand, enables the man to keep the rows perfectly parallel with the preceding course of the drill. This is done by the man's holding the steerage handle as it is shown in the annexed cut, and keeping the small fore wheel in the track of the former large one. This insures perfect regularity, and prepares the whole field, so that the horse hoe can be used to great advantage and without injury to the grain. This arrangement could very easily be adapted to any of the other drills, and would greatly add to their usefulness.

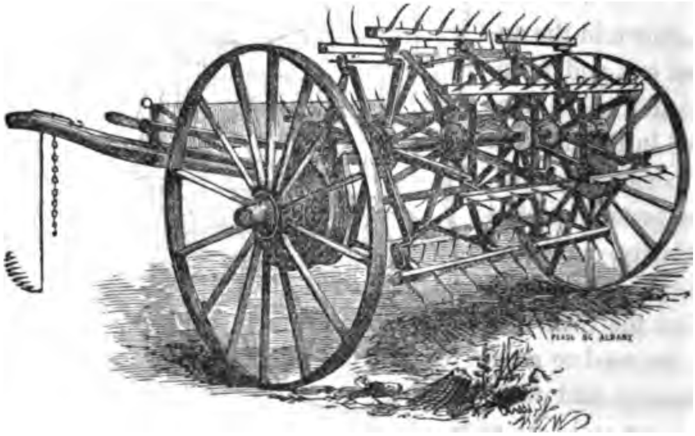


SUFFOLK DRILL.

A Prize Medal was awarded for a BELGIAN DRILL, which was a very simple one in its arrangement, the seed delivered by flat iron paddles and not by cups. The coulters are fixed to the beam, and do not work on levers, but a small coulter to cover in the seeds does. It is so arranged that the quantity of seed delivered can be varied without stopping the machine. As it costs only $12, it had certainly advantages over many drills exhibited.

RANSOMS & MAY of Ipswich, England, exhibited a cheap drop drill, for depositing seed similar to a hand drill, at equal distances, which it accomplishes with great exactness. A Prize Medal was awarded, and it appeared to me for certain purposes superior to any exhibited. The feeding cups are so arranged that their action ceases when the machine stops. The quantity of the seed deposited may be varied from 3½ to 5 pecks per acre by a change of the cups. The depositors have a motion independent of the coulters, which enables them to adapt themselves to any inequality in the surface of the soil.

A HAY MAKING machine, though somewhat complicated, has received the Prize from the Royal Agricultural Society, and is undoubtedly a very valuable improvement for England, and may be made useful in this country; one man can work it, and raise or lower it to its work instantly, and throw it in or out of

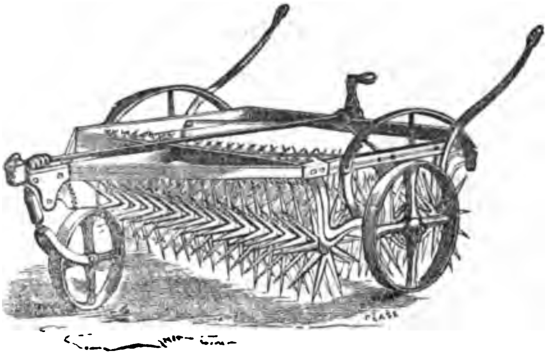


HAY MAKING MACHINE.

twenty men, and from seeing it in use, I doubt not, it is a great labor-saving machine, and a very efficient helper in the field.

Of *manure* distributors for liquid or solid manures, there was a very great variety, some of them very effective. One exhibited by Croskill, holding about eight bushels of manure, has a motive power which passes the manure to a revolving notched roller, which regulates its equal delivery in a dry or moist state without clogging, and is so arranged as to increase or decrease the quantity sown to any number of bushels per acre; price about $50.

The Norwegian Harrow is used immediately after plowing. It breaks and pulverizes the furrow, leaving three or four inches depth of fine mold, admirably prepared for seed. It saves the use of the ordinary sized harrow, a very light implement only being used after sowing. It thoroughly pulverizes without consolidating the soil, and it prepares the roughest land, whether moist or dry, without clogging. This implement was originally introduced from Norway, has been much improved and is very valuable and effective one, and although too expensive, (costs $65.00,) for general use in this country, it seems very desirable for our stiff soils, and I have no doubt, it could be very much lessened in price here. Having seen it in use, and obtained the testimony of many practical farmers who have it on their farms, I cannot doubt its great utility.



Croskill's Improved Norwegian Harrow.

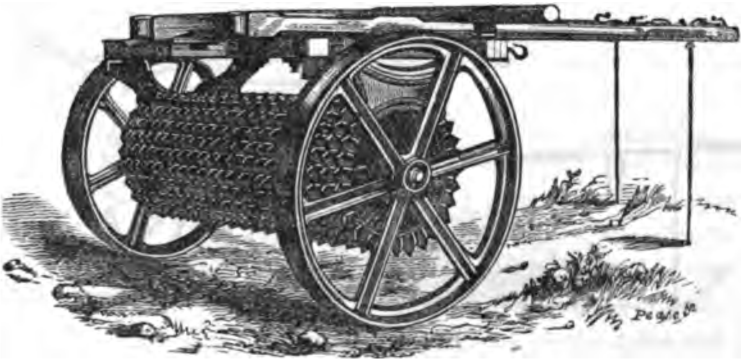
A very valuable implement in use in England is CROSKILL'S ROLLER and Clod Crusher. It consists of cast metal discs or roller parts, placed loosely upon a round axle so as to revolve independently of each other. The outer surface of each roller part is serrated and has a series of sideway projecting teeth, which act perpendicularly in breaking clods. The size, 6 feet wide by 2½ feet in diameter, consists of 23 roller parts. Each alternate ring is made larger in the eye, and in revolving causes an up and down motion along the entire surface of the roller, thereby increasing its power and effecting the best means of self cleansing. It is used only when the land is dry. When taken to the field, dig a hole under each travelling wheel, until the roller part rests upon the ground, then take off the road wheels.

By the use of this roller crops of Wheat, Turnips, Beets, &c., are annually grown in England upon land which without its use cannot be cultivated; and a very beneficial effect is produced upon the grain plant by its seasonable application, and it causes a more healthy plant and a larger yield per acre. It ensures the destruction of the wire-worm and the grub, which are so detrimental, often destroying the entire grain crop. Its use on many varieties of grass land is most beneficial. It works admirably. The number in use in Great Britain, in 1850, was about 2,500.

I had an opportunity of witnessing this roller in use on several farms, and became satisfied of its great utility, and its introduction to this country, would prove of immense advantage to our farmers. The following testimonial from a practical Scotch farmer shows in what estimation it is held:

"The deep indented points of this ponderous machine penetrate and crush the hardest clods; reduce big masses of clay baked soil into a fine mold, and rapidly converts many acres of land into the finest condition for the reception of grain or the smallest seeds. It is not only valuable as a pulverizer, but is unequalled as a compressing roller for rolling young grain crops when the plant is from three to eight inches out of the ground. The practice of driving sheep over the fields to give solidity to the soil, is entirely obviated by the use of the machine, as it is more equal, effective and rapid in its operations, like the action of a gardener who presses the soil with his fingers around the roots of the plant—while the action of smooth rollers is like placing the foot only upon the plant. It might be supposed that this implement is limited in its use only to stiff soils. This, however, is not the case, for, on light lands, where, from want of clay and finely divided matter to give body and firmness, the soil is too loose to carry wheat, and on soils too puffy to carry clover, the Clod Crusher used as a compressing roller, has produced the most valuable results, giving firmness and tenacity to the soil, aiding the plant to strike its roots firmly, and to produce a firmer, stronger and more healthy and fruitful plant."

Another most important attending benefit on the use of the implement is, that the ravages of the wire worm and grub are most effectually arrested. By the indented points of this heavy machine, the slug is crushed to death, while the burrows made by the wire worm from root to root are destroyed, the free working of this voracious enemy prevented, and the means of its support intercepted; the natural consequence is proved to be a decrease of the wire worm by starvation. I have dwelt more at length on this implement than I should have done, had I not deemed it a most valuable one to be brought into practical use.

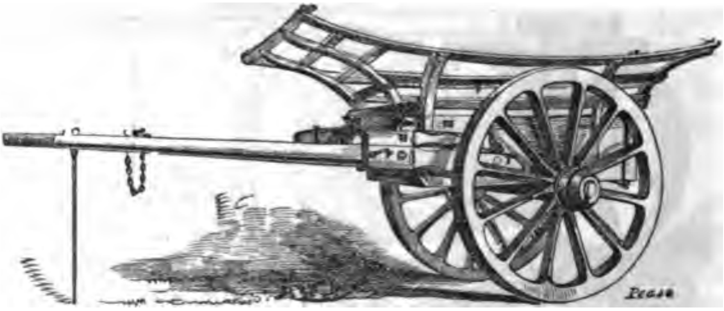


Croskill's Prize Roller.

Price from $70 to $85. For the Norwegian Harrow and Prize Roller, a Council Medal was awarded Mr. Croskill.

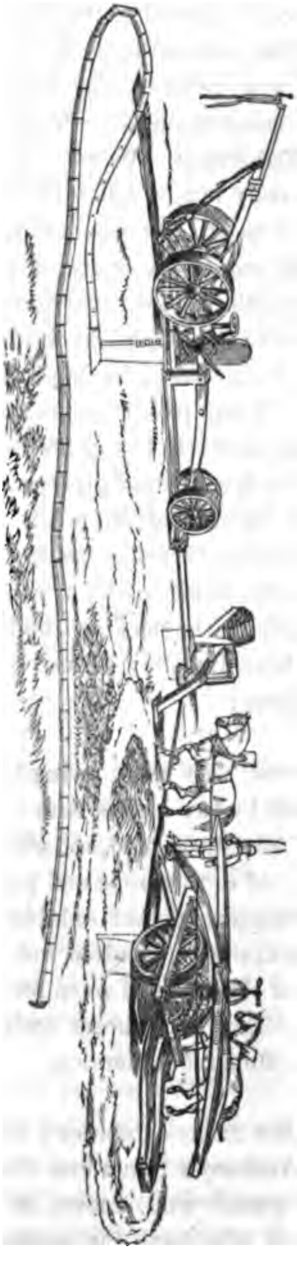
The Carts in use upon the farms in England where the improved ones, have been introduced, appeared to me very useful for farm purposes, and certainly worthy the attention of our farmers. Carts are constructed for a single horse, to carry 30 cwt. They are very convenient and prove, in every respect, very serviceable. Having been one of the Sub-jurors to whom was referred the carts, wagons, &c., on exhibition in the Agricultural Department, I was greatly gratified with the improvements which have been made in them. There were, on exhibition, several of the ancient ones which still are common in every part of England, of very great weight, with hubs as large as those of ox carts with us, and in every respect, very cumbersome. The improved ones, of lighter make, and of less price, were, however, most prominent, and to those only were the prizes awarded. I give the cut of Mr. Busby's Cart, which was conceded, by the Judges, as upon the whole, more correct in the principle of construction than any other on exhibition. This gives a very good idea of the cart arranged for field services—the arms and the wings are removed, when it is desired, for the ordinary purposes of the farm.

Having witnessed the operations of these carts, in various kinds of farm work, I am strongly inclined to the opinion that their introduction into more general use in our country, would be highly advantageous, both in point of economy and convenience.



Busby's Cart.

An American, for many years a resident in England, Mr. H. Pinkus, had on exhibition many of his inventions, among others, what was called his new system of Agricultural Tillage, by stationary steam and atmospheric motive power, giving motion to plow shares and other implements by ropes from the engines intermitingly stationary in the fields. This showed great ingenuity, though, as yet, it has not been reduced to practical use.



FOWLER'S IMPROVED DRAINING PLOW

There was exhibited also, another steam arrangement for plowing, in the English department, called Lord Willoughby DeEresby's steam plow, but as yet it has not been brought into practical operation, so as to determine its value.

Fowler's Improved Draining Plow was shown, and one was also exhibited in operation a few miles from the exhibition. It is stated to execute any drainage above four feet deep, at less than half the cost of the present system, and without disturbing the surface soil. In commencing the work, the plow is taken to one end of the field, and to the other the capstan, off the drum of which is run a wire rope attached to the plow. The plug and coulter are then dropped into a hole prepared for them, and the drain pipes are threaded upon a rope attached to the back of the plug; when the horses attached to the levers of the capstan, by walking around, wind the wire rope on the drum and pull the pipe forward with the drain pipes, which are thus laid, when the soil is suitable, free from stone, more accurately than by hand. It has been in operation for a few years, and the improvements which have been made, as exhibited in the one on trial seemed to promise its practical adaptation for that country. It is thus referred to in the report in this class: "But for the American reapers, Mr. Fowler's draining plow would have formed the most remarkable feature in the Agricultural department of the Exhibition. Wonderful as it is, to see the standing wheat shorn levelly low by a pair of horses walking along its edge, it is hardly, if at all, less wonderful, nor did it excite less interest or surprise, among the crowd of spectators, when the trial was made at this place, to see two horses at work by the side of a field, on a capstan, which, by an invisible wire rope, draws towards itself a low frame-work, leaving but the trace of a narrow slit on the surface. If you pass, however, to the other side of the field, which the frame-work has quitted, you perceive that it has been dragging after it a string of pipes, which, still following the plow's snout, that burrows all the while four feet below ground, twists itself like a gigantic red worm into the earth, so that in a few minutes, when the frame-work has reached the capstan, the string is withdrawn from the necklace, and you are assured that a drain has thus been invisibly formed under your feet." The Jury decided as follows:

The implement went through the trial very well, laying in the tiles with great apparent ease, worked by two horses, with a capstan which was firmly and easily fixed into the ground, and afforded a firm traction to the plow by means of a wire rope and pulley. Progress has been made, since the implement was exhibited at Exeter, in rendering the level of the drains in a degree independent of the level of the surface, "but there is still room for further improvement in giving to the drain an uniform incline." The award, therefore, of the Jury was Honorable Mention.

Churns formed a very numerous class in the exhibition; of the four prizes awarded, one was for Anthony's American Churn, called the "Improved American Churn," well known in this country, exhibited by an English firm who have the patent for

if desired, delivering each size at a different place. It did its work remarkably easy and quick, and was superior, I think, to any exhibited. One of the machines was purchased by an American gentleman at my suggestion, and I hope we may have it introduced into this State, as it will prove, I doubt not, a real improvement.

STEAM ENGINES.—Of these there was a great variety, remarkably well got up, both stationary and movable. They are in use in many parts of England. I saw them at work on several of the large farms and they were very much approved. For this country, however, I did not see any that I consider as useful as those manufactured in our own State by Hoard & Bradford, of Watertown, which for simplicity, lightness and cheapness, as well as efficiency, possess decided advantage over any I saw.

Of the THRASHING MACHINES, there was a great variety exhibited; none, however, except one in the United States division, from Messrs. Allen New-York, operated by a single horse. Those in the English department that were operated by horses required from four to eight. The steam power is fast superseding the use of horses for this purpose.

Of SMUT or grain cleaning machines there were quite a number exhibited, but none which, so far as a judgment could be formed from a careful inspection and without a trial, which should have been had, was superior to those shown in the United States department by Leonard Smith of Troy, N. Y.

A number of FANNING and winnowing Mills, of various patterns, were shown. GRANT'S, from this State, which has stood pre-eminent for its superiority, was exhibited, and was bought by a gentleman from Scotland, after a very careful examination—he being satisfied that it was the best machine he had ever seen.

DYNAMOMETERS, for testing the draught of plows, and other implements, were shown. One from France, a self-registering but unfortunately the days on which the implements were tested, were so moist that it could not be used. One, by Bentall, patented in England, was used on the trial—and did tolerably well—but I do not consider it an improvement upon those in which the strain is indicated by the compression of a spiral spring which we have in use here.

The trial of the implements having been made mainly previous to the opening of the exhibition, may account, in part, for the want of notice being taken of many very useful articles in the United States Department—though the assurance was given after the trial had been made of the plows and reapers, that the principal collections in the United States Department, should receive an Honorable Mention. Why this was not done, does not appear in the report made.

Ide's Wheel Cultivator, exhibited by Levi Wells, Rochester, is a very useful implement here—but no opportunity was given to test its capabilities at the exhibition.

Charles Ross of Rochester, had on exhibition two of Fitzgerald's Portable Grist Mills, with his improvements—but they were not in operation. The Jury examined them, and their cheapness were recommendations which attracted the notice of farmers. There were a number of mills on exhibition, and the Prize Medal was awarded to one exhibited in the English Department, which was composed of metal—and which had, I think, an apparatus fo supplying air to the grinding surface of the mill stones, which considered important and useful.

Eddy & Co., Washington County, N. Y., had a model of Tap Horse Power, on exhibition, which, in this country, is r approved.

CLASS 10.—*Philosophical Instruments* and processes depending on their use.

The exhibition in this class was very extensive and of great variety, and comprised many articles of ingenuity, &c. Of the 30 Council Medals, only one was awarded to the United States, and that to W. Bond & Son, of Boston, for the invention of a new mode of observing astronomical phenomena, &c. The great Equatorial Telescope, of Ross, which was said to be the most powerful instrument ever made, received a Council Medal. "The diameter of the object glass is 11¾ inches—and a magnifying power of six hundred times in diameter, may be used without prejudicially darkening the field of vision." There were many other Telescopes of great merit, exhibited—several from France, of peculiar excellence. The French exhibition, in this class, was very numerous and of acknowledged merit, and received a large number of prizes. A Council Medal was awarded to Count-Durrin of London, for the extraordinary application of mechanism to his steel expanding figure of a man. This piece of mechanism was designed to illustrate the different proportions of the human figure; it admits of being expanded from the size of the Appollo Belvidere to that of a Colossal Statue. Its immediate object is to facilitate the exact fitting of garments, more especially in cases where great numbers are required, as in the equipment of an army.

Personal attendance is not required, as there is adapted to the figure a new system of measurement, which enables any person to take the exact size and form of an individual—and from the measurement so taken the figure can be so adjusted as to represent, correctly, the person to be fitted. An establishment provided with a few of these figures, would be able to fit, perfectly, the clothing of an entire army. This was a most ingenious piece of mechanism, and in addition to its ingenuity, can be made of great practical utility.

J. R. ST. JOHN, *of Buffalo, Self-Determining Compass.*—To this was awarded a Prize Medal. This compass is so constructed cators, upon graduated scales. This result is obtained from two small or sattelite needles suspended upon axes fastened in the disk or compass cord, at equal distances, and right angles to the center of the main needles. The extremities of the graduated arcs or scales, are marked with the letters E. and W., by which the character of the deflection is known, while the quantity is read upon the scales. It shows the presence of any disturbing forces upon the needle, and also the amount of deflection resulting from these causes. It was admitted to be in advance of any instrument in use. Many were decidedly of opinion that this should have received a Council Medal.

The AQUATIC VELOCIMETER, shown by the same gentleman—which gives the true velocity of a vessel through the water, and the aggregate distance traveled at any time, was very ingenious.

ERRICSON, New-York, exhibited a variety of very ingenious and useful nautical instruments. His SEA LEAD, a valuable instrument for taking soundings at sea without rounding the vessel to the wind, and independently of the length of the lead line.

PYROMETER, an instrument intended as a standard measure of temperature from the freezing point of water up to the melting point of iron; the tension of a permanent volume of atmospheric air or azote, measured by the height of a column of mercury under a vacuum, being the indicator.

ROTARY FLUID METER—For measuring fluids by the velocity with which they pass through apertures of definite dimensions.

RECIPROCATING FLUID METER—For measuring the quantity of water which passes through pipes during definite periods.

ALARM BAROMETER.—Whenever the mercury sinks below any given altitude, the falling of the column causes a gong to be struck and being near the helm of the vessel gives instant warning to the helmsman, and the danger of an approaching storm can be averted.

Distance Instrument—To measure the distance of an enemy's ship, to enable the officer measuring to elevate his gun with precision. Hydrostatic Guage, and Hydraulic Machine for testing the same.

These instruments were all valuable and were examined by nautical men with great interest. They were most creditable to Mr. Erriccson, and elicited from the Jurors the Prize Medal.

Professor Bache, of Washington, received a Prize Medal for his Standard Weights, Measures and Balance. They were admirably prepared, and few articles in the United States Department attracted more attention. Mr. Burt, of Michigan, for a solar compass and instruments, received a Medal. They were of great excellence, and justly entitled to the award given.

Daguerreotypes were extensively shown. Those from the United States were conceded to be superior in general effect, to those from any other country. Brady & Lawrence, of New-York, each received a Prize Medal—and one was awarded to a Mr. Whipple, of Michigan, for a daguerreotype of the moon. There were several other exhibitors whose pictures were very superior. Those of Evans, from Buffalo, were much admired, as were those of Meade & Brothers, New-York. The following article, from an English literary journal, shows in what estimation our exhibition was held. "Daguerreotypes are largely displayed by the French, as might have been expected, that country being proud of the discovery; but the examples exhibited by the Americans surpass, in general, beauty of effect, any which we have examined from other countries. This has been attributed to a difference in the character of the solar light, as modified by atmospheric conditions; we are not, however, disposed to believe that to be the case. We have certain indications that an increased intensity of light is not of any advantage, but rather the contrary, for the production of daguerreotypes; the luminous rays appearing to act as balancing powers against the chemical rays. Now, this being the case, we know of no physical cause by which the superiority can be explained, and we are quite disposed to be sufficiently honest to admit that the mode of manipulation has more to do with the result than any atmospheric influences. However this may be, the character of the daguerreotypes executed in America is very remarkable. There are a fulness of tone, and an artistic modulation of light and shadow which, in England, we do not obtain. The striking contrasts of white and black are shown decidedly enough in the British examples exhibited in the gallery—but here are coldness and hardness of outline. Within the shadow of the eagle and the striped banner we find no lights too white and no shadows too dark; they dissolve, as in Nature, one into the other, in the most harmonious and truthful manner—and the result is more perfect pictures."

A CALCULATING MACHINE, by Staffel, a Polish Jew, in the Russian Department, was a very ingenious contrivance, for which a Medal was awarded. It was about 17 inches by 9, and 4 inches high. The upper row contained 13 figures, and is immovable. The second and third, containing seven figures each—movable. The words Addition, Subtraction, Multiplication, and Division, are engraved on a semi-circular ring to the right; and underneath is a hand, which must be directed to whichever operation is to be performed. The figures being arranged, a handle is turned—the operation instantly performed. If a question be wrongly stated, the error is instantly detected and announced by the ringing of a small bell.

BALANCES were exhibited, of great perfection—a magnetized one from Falmouth, England, would weigh the ten thousandth part of a grain—and a very superior one from France, which was affected by the slightest breath of air.

ELECTRIC TELEGRAPH Instruments, in great variety, were shown, each kind in operation. The American printing Telegraph was exhibited by an English party. Bain's Telegraph was awarded a Council Medal—as was Bakewell's copying Telegraph—and the same was awarded for an instrument from Prussia—and Prize Medals to several other exhibitors.

A Prize Medal was awarded to Mr. WARD, an English exhibitor, for closed cases, by which plants may be grown in any locality, even in crowded cities, or conveyed from one country to another, with complete success. The use of the cases was suggested to the inventor in 1829. Wishing to obtain a perfect specimen of a sphinx (while residing in London) he had buried its chrysalis in some moist mold in a bottle covered with a lid. Two or three days before the insect assumed its perfect form, a seedling fern and a grass made their appearance on the surface of the mold. In this condition all their wants were supplied. They had sufficient light—whilst the lid, at the same time that it excluded the noxious soot, prevented the escape of the moisture. The law which enforces the diffusion of gases secured a constant circulation of the air, and its quiescent state, enabled the plants to bear variations of temperature which, in open exposure would have proved injurious; various experiments carried on with a great variety of plants, established the conclusion that all plants, whose natural conditions can be fulfilled, can be grown in those cases, in any locality, even in the center of the most crowded cities, or conveyed from one country to another, with complete success.

Mr. Fortune, who was sent out to China by the Horticultural Society of London, put 250 plants in these cases, and landed 215 in good condition—while in the old plan of carrying plants, it is stated that only one plant in a thousand survived the voyage from China to England. The same pure and moistened atmosphere which favored the growth of the most delicate plants in the heart of the most crowded city, would be of incalculable advantage in numerous diseases.

This was a self-registering instrument, which registered on paper the varying processes of the atmosphere, the changes of the temperature of air and evaporation, and those of the electrical states of the atmosphere, the fall of rain, the amount of water evaporated from a surface of water and the force and direction of the wind. It is a very ingenious, as well as useful instrument—particularly in meteorological investigations—noting every change, however minute, and registering those at night as well as those happening during the day. It received a Council Medal.

Cotton's Sovereign Weighing Machine.—A machine which I saw in use at the Bank of England, weighing sovereigns with great rapidity and perfect accuracy, was represented in the Exhibition. It separates with unerring accuracy coins of standard weight, from those that have not that weight. A pile of coins being placed in a tube—the lowest is pushed out by a lever on the end of a beam, which, if the coin is of full weight, is depressed through a small space, but if it be too light, the beam remains stationary. A small piece of steel now advances from one side, on a level with the position that the heavy coin assumes, and immediately afterwards another advances from the opposite side on a level with the position of the light coin. If the coin is full weight the first advancing piece pushes it into a receptacle, and the second has no effect; if, on the contrary, the coin is light, the first passes under it, and the second strikes it into another receptacle. This is operated by steam power, and there are a dozen at the bank frequently all in operation at the same time, and the rapidity and certainty with which they work is truly wonderful. This was introduced late into the exhibition, but I believe received a prize medal from the Jury.

Musical Instruments were also in this class, submitted to a sub-jury. In this division there was a great variety of instruments exhibited. Organs of immense power—one by Willis, of London, which is said to weigh 30 tons, with 5,000 pipes—a great variety of piano fortes, &c. From the United States there were a number of pianos exhibited, and although in the early part of the Exhibition they were slightly noticed by the press, every one of them received an award of a Medal or Honorable Mention. Chickering, Meyer, Nunns & Clark, received medals. Gilbert & Co., Heers & Pirsson, Honorable Mention; and Wood of Virginia, a money award of £50, for his Piano Violin, which attracted attention from its ingenuity, and was in constant requisition to satisfy the eager curiosity of visitors. Goodyear, of the United States, received Honorable Mention for an India Rubber flute.

HOROLOGICAL, *Clocks and Watches*. The number in this sub-division was immense, and of every conceivable size and variety. France and Switzerland exhibited very largely, and received a large portion of the prizes. Dent, of London, celebrated for his superior work, received a Council Medal for a Turret clock. In the French department, were a very great number of very elegantly finished clocks, of almost every imaginable variety of form. In the Austrian department, was exhibited a clock for which is claimed the realization of perpetual motion—continuing to move until its materials are worn out; the power which winds it up, being the varying pressure of the atmosphere acting on quicksilver, which turns a wheel and accomplishes the work. The American exhibition of clocks was of considerable variety, and unusually cheap—these found more favor with purchasers than they did with the jury. Geneva, so long celebrated for miniature watches, exhibited the smallest watch ever made. It was inserted in the top of a gold pencil case, was $\frac{3}{16}$ of an inch in diameter, which on its dial gave the seconds, minutes, hours and days of the month. A magnifying glass was by the side of it, to enable all to see its perfection of finish, which many, by the naked eye, could not clearly distinguish. In connection with this, was exhibited a piece of tiny mechanism—very ingenious—a small pillar of a few inches in height, the top of which opens at the touch of a spring, and a little bird, most perfect in its construction, in the very motions of life, sings a brief song and then retires. Price $80. There were many curiosities in this division, that attracted much notice, several of them constructed by persons not connected with the trade.

of the world, which occupied 34 years in the manufacture, requires to be regulated once in 130 years. A clock made by a *tailor*, gave the days and months, the motions of the sun and moon, the state of the tide in various countries, and runs for 12 months; and a musical clock, made by a *blacksmith*, played a tune every three hours.

Surgical Instruments.—In this sub-division, there was an exhibition of the improvement made in this department—no Council Medals awarded, and not a very large number of Prize Medals. *Palmer's artificial leg*, from this country, received a medal, to which it was most justly entitled. Among the great number of preparations there was none that compared with this—and I was informed that the Marquis of Anglesea, who left one of his limbs at the battle of Waterloo—had Mr. Palmer before him, with his leg, and, in the midst of a collection not numerous enough to supply a large army, yet very extensive—this was pronounced superior to all. I did not learn whether one was prepared for the Marquis—but probably he has, ere this, tried its quality. In the French Department, the collection of superior instruments were of great variety and finished most perfectly. The anatomical models from France were very perfect, and are now generally introduced as aids to the study of Anatomy. These comprised not only the human figure but those of domestic animals. Various instruments for aiding the hearing, which may be worn without being noticed, were shown.

In the English department, one exhibitor presented a complete cabinet of surgical instruments, containing all that was necessary for general operations in surgery, with the latest improvements. The collection was very admirably executed, and was, in all respects, most perfect, and was awarded a Prize Medal, to which i was certainly entitled, from its great excellence. Dental instr ments were exhibited by several exhibitors from this State, very high finish and equal to any shown.

CLASS 11. *Cotton Goods.*—The exhibition in this class, considering the importance of the manufacture, was not large—yet all the various departments of it were sufficiently illustrated. The exhibitors were from England, United States, Switzerland, Portugal, France, Belgium. As illustrative of the manufacture, were shown the preparations from the raw cotton, in all its stages, to the finishing of the cloth, in every variety in use. A Manchester firm had a collection of this description, of 48 preparations, from a sample of New Orleans Cotton, to the most beautiful and exquisitely finished white, printed and figured lace.

Prize Medals were awarded to the United States for an assortment of drillings, tickings, shirtings, sheetings and cotton flannel, exhibited by the Amoskeag Manufacturing Company, Manchester, New Hampshire, and the Willimantic Duck Manufacturing Company, for cotton sail cloth; the same material, I think, of which the sails of the American Yacht were constructed. As there was nothing very special in this class, and as I have given a full account of the progress of the cotton manufacture, under the head of machinery, I shall not dwell upon it. I regretted we had not a much more varied representation in this class—as we might have shown a variety of cheap fabrics that would have given more fully evidence of what we are doing, as well as what we may be enabled to do in this department of Industry. The number of persons employed in the manufacture in England is estimated at upwards of half a million persons—and the total annual value of the material manufactured at 36 millions sterling.

CLASS 12. *Woolens and Worsteds.*—The exhibition in this class was extensive, and of surpassing richness in many of its branches. Broadcloths, Flannels, Tartans, Worsted, Alpaca, &c., in great variety, and from various countries displayed to great advantage, the skill and perfection of the respective countries. The exhibition from England, Scotland and Ireland, was particularly interesting, as there were shown the extremes, from the finest products, that the skill and inventive talent of the country has produced, to the primitive manufacture of the coarsest woolen goods made upon the hand-loom in Ireland and the Highlands of Scotland. There were many competitors for supremacy in this class from the Continent, and the beauty and excellence of their goods, secured a very liberal distribution of prizes. The French manufactures were peculiarly fine and highly finished, and Russia, Saxony, Prussia and Belgium, exhibited fabrics of very great excellence. Samples of Flannels from Massachusetts, which were very fine, received a medal, and Honorable Mention was also made of Blankets exhibited. There was but a small exhibition, however, from this country. The number of exhibitors from Great Britain of woolen and worsted fabrics, was about 500. The most extensive collections were from the west of England, so very celebrated for their manufactures, and where great perfection has been attained. An exhibition of goods made from the woolen waste, suggests some reflections. It is asserted, and doubtless truly, that some of the manufacturers, by using this, have sustained themselves, and have reaped a rich remuneration. If this is sold in market with a full knowledge of its composition, there certainly can be no objection to it—but if, as is alleged, it is sent to other countries and disposed of as an article of very different character, it cannot be justified.

Prince Albert exhibited articles manufactured from the wool of Cashmere goats, kept at Windsor Park. The articles were two shawls—two dress pieces, and a specimen of coarse cloth. The dresses and the shawls were very elegant in their appearance. The specimens were arranged in a glass case, in the main avenue of the palace, and attracted much attention. The following account of the preparation of the wool for the purpose of the manufacture, may not be uninteresting. "The cashmere goats wool, consists of two distinct materials, called wool and kemp. The wool is beautifully rich and soft to the touch, and is probably superior in this respect to the finest Continental lamb's wool. The kemp presents the appearance of a coarse rough hair, such as is avoided by the manufacturer in all purchases of wool. The two wools, as shown from the goat, are closely intermingled, and present the appearance of a coarse hairy wool of a low character; but a minute inspection shows that part of it is of a very fine quality. In order to separate this fine quality from the coarse, it is necessary to do so fiber by fiber; and this has to be done by hand, no machinery having as yet been applied to this purpose. The process is very difficult, one person not being able to separate more than half an ounce in twelve hours.

"When it was known in Yorkshire that the Prince desired an experiment to be made in the manufacture of wool from his goats, hundreds of volunteers offered themselves to separate the fine wool from the coarse hair, and for some months 1000 persons were employed, as their leisure hours enabled them to give attention, without any remuneration required; and an elegantly engraved certificate, with a view of the Crystal Palace, stating that the holder had been employed upon the work, was presented to each." The experiment was an interesting one, though the question of profit in the use of the wool may not have been determined.

TARTANS and ALPACA goods were shown in great variety, and of surpassing excellence; and articles of wool and silk and wool and cotton, which are very extensively manufactured at the present time, were represented in several of the departments. A woolen manufacturer from the United States, whom I met at the Palace, a gentleman of great intelligence and well acquainted with the manufactures in our country, informs me, after a careful examination of the contributions in this department, he having been upon the jury for a portion of the time, that in very many of the descriptions of articles exhibited, we might have presented goods, that in every respect would have equalled those on exhibition. He also stated, that it was a most valuable and instructive exhibition, and one that would amply have repaid any person interested in the subject, to have crossed the Atlantic to examine. It appeared to me that many most valuable lessons might have been derived by our manufacturers from a careful study in this department.

CLASS 13. *Silk and Velvet.*—I have noticed under the 3d class all that I deem important in regard to that portion of the Exhibition. The articles in this class were of great variety of excellence, and fully illustrated the perfection which has been attained in this department of manufacture, by which the most expensive and rich goods are supplied for the use of those whose means enable them to procure them.

Class 14. *Flax and Hemp.*—The exhibition, in this class, was quite perfect, and showed the various purposes for which Flax and Hemp are used—but, as I have given an extended description of the improvements that are in progress in the preparation of Flax for common use, under Class 3, I do not deem it necessary to dwell upon the subject more at large.

Class 15. *Mixed Fabrics*, including *Shawls.*—There was a fine show of Shawls tastefully arranged, mostly in glass cases, and with due regard to their most advantageous display. Those from Paisley, long celebrated for its manufactures, were of great excellence, and of variety suited to every taste. Some of the Paisley manufacturers displayed Tartans, of every class, and they were objects of universal admiration—and when the excursion trains brought up the Scotsmen, from the North, it was amusing to witness the delight they manifested in the rich display of their favorite *Tartans.*

In the United States Department some very fine shawls from the Lawrence Mills were shown, and attracted the notice of all interrested in this class, and received a Prize Medal. James Roy & Co., of the Watervliet Mills, New York, sent out late, a few of their superior shawls to my care, but they did not reach London until the Jurors had finished their labors. I had, however, the pleasure of showing them to the Chairman of the Jury, and a member from France, who expressed their admiration of these shawls and of their extraordinary excellence, and I was assured that had they been received in time, they would have found a place in their awards with the best Paisleys.

There was shown, from Paisley, a very ingenious machine, whereby patterns in checks, stripes and Tartans, may be combined and displayed by means of sliding mirrors and slips of colored glass. The principle is a modification of the power of the Kaleidoscope. Among the advantages claimed for it, was the extraordinary facility with which the idea of a pattern can be momentarily realized, modified or changed. When the pattern is approved of, it is not necessary to paint it upon paper, as brass scales affixed to the sides of the mirrors indicate, at a glance, the exact number of threads of each color, and how many repeats are necessary for the breadth of the web. The patterns thus originated can be enlarged or diminished at pleasure. Another advantage is the simplicity, ease of adaptation, and the perfect manner in which the effect of finished cloth, the crisp transparent surface of silk, and the soft opaque texture of wool, are severally given. The importance of this apparatus, giving the power of realizing, without expense, any new idea that may occur, in the preparation of patterns, must commend it to those engaged in this branch of manufacture.

There were exhibited, from France, some very choice shawls, of admirable finish and richness, and great beauty of design. A Council Medal was awarded to a French house, for the discovery of a new and important process in the production of elaborate designs. This firm exhibited Cashmere shawls, of great beauty. No other Council Medal was awarded.

Very fine exhibitions were made, in this class, by Austria, Prussia, and Belgium.

CLASS 16. *Leather, Saddlery, Harness.*—There was a very large collection of articles, and of a varied character in this class. The English exhibitors, as might have been expected, excel all the others in extent and variety of articles; in fact, some of the exhibitors from London, seemed to have brought their whole establishments.

There was a great variety of leather exhibited, in all conditions and states of manufacture from various countries. One great object in the preparation of leather, appearing to be to diminish the time required in its manufacture and, although it has been doubted whether leather produced rapidly is equally durable and serviceable as that produced by the former slow process; the exhibition, I think, very clearly showed that the tendency is decidedly to the shorter process—and there were many samples exhibited where the leather had been prepared in a few weeks, that formerly occupied many months, and to appearance, certainly equal to any on exhibition.

There were some capital samples of leather from this State, exhibited by Hon. Zadock Pratt, of Prattsville, of eight different varieties, from *four* tanneries, which had been finished in about four and a half months—mostly with hemlock bark. The samples were very admirably finished, and attracted attention. Harnesses and saddlery were in great variety. The expensive character of many of the articles, evinced more attention to display than utility. From this country, there were several exhibitors, and medals were awarded for calf-skins from Philadelphia; for a light harness from Boston, and a heavy double harness from Philadelphia, very elaborately mounted; an Honorable Mention, for a portable saddle, by Adams, New-York. Mr. Lloyd, of Albany, exhibited a very neat and admirably finished light harness, made entirely of American materials, mounted with gold from California. As show was deemed far more important than the value of the mountings, Mr. L. did not receive a prize which, I doubt not, would have been awarded, had more showy and less valuable material been used for his mountings, suited to the taste of the exhibition. Mr. Lloyd also exhibited some very fine made ladies' and gentlemen's leather travelling trunks. In the French Department there were shown many very fine samples of leather of various descriptions. In the fine varieties, calf-skin, kid, morocco, &c., I think the French exhibition was unequalled.

Furs.—In this class, *Furs* were exhibited in considerable variety. A very large collection, by the Hudson Bay Company, of the various kinds, which are taken mainly on this continent. The exhibition, by a firm of London, of a very great variety of furs in common use, was a very instructive one, showing the difference between the really valuable furs and their counterfeits. As illustrative of this, Rabbits and Ermine unlike as two furs can be—(except both are white and the Rabbits have the tail with a tip of black, like the Ermines, affixed)—the Ermine, brilliant, firm, pointed, the hair lying closely and evenly—the Rabbit coarse and blunt. Yet, notwithstanding all this difference, from some preparation known to the trade, a London lady is said to have given £20, nearly $100, for a Rabbit skin cardinal, when a *real Ermine* could have been bought for nearly half the money. C. Mawson, New-York, exhibited some beautiful Muffs and Boas, made from the skins of animals abounding in North Carolina. They are called Silver Martin Muffs.

Canada exhibited largely in this class, and some very highly finished articles. Russia, also, had some very choice furs, and the Emperor's own Pelisse, made entirely from the skin of the Black Fox, was among the attractions in this department; it was valued at £3,000. Mr. Nicholay, of London, who had the most rich, varied and extensive collection in the exhibition, offered to produce a pelisse better than the Emperor's for £1,000; and from the richness and extent of his collection, he could doubtless do it The Furs manufactured in Russia are purchased almost entirely for the London market

It was rather surprising, to learn that the British Furs, consisting of Hare, Rabbit and Cat skins, are prepared chiefly for the American market, they being preferred in this country, it is affirmed, over the real valuable and superior Furs of our own continent, on account of their cheapness. This may be so, but if it is, is only evidence, that we are buying an inferior article, on account of its apparent cheapness, as is the case in some other fabrics, rather than use the superior ones of our own country, which have not the stamp of imported upon them.

Class, 17. *Paper and Stationery, Printing and Book-Binding, &c.*—Only one Council Medal was awarded, and that to the Imperial Court and Printing office of Austria, for novelty of invention, and the number of new combinations in the art of typography. Among the objects on exhibition, was a collection of 11,000 steel punches, including 104 different alphabets, from the Hieroglyphic, down to the Japanese, Mandschu and Formosan. There was a collection of Gutta Percha and galvanized copper matrixes and patrixes of wood cuts, *facsimiles* of antique relievos.

As a specimen of the typographic strength of the Imperial printing office, there was also a copy of the *Hall of Languages*, consisting of seventeen sheets in elephant folio, containing the *Lord's Prayer* in 608 languages and idioms, printed with Roman letters, and in 206 varieties of language, in the characters peculiar to each; a work of most splendid execution.

There was also a collection of *Mss. Writings* in the early ages, from the sixth century to the days of Guttenberg, and the invention of the art of printing. There was also a Japanese Novel, in the Japanese language with a German translation, the first work of the kind ever printed with movable Japanese types. The appearance of this work caused great sensation in foreign countries. The perfection with which it was executed, created doubts in the minds of the members of a German society for the promotion of the Oriental languages, whether the Japanese part and the illustrations of the work had not been executed in Japan, and the German part only at Vienna. There were many other very ingenious and valuable articles exhibited in this collection, and the establishment is one of the most distinguished in the world.

A very interesting collection of 165 books in different languages, from the 175 versions of the Scriptures, either in whole or in part which have been published directly or indirectly, by the British and Foreign Bible Society, was exhibited. Of this collection 118 were from translations never before printed; and of which more than twenty-four millions of copies have been circulated since its institution in 1804. Eight specimens of four editions of the English Bible, showing the improvements made between 1816 and 1851, in reference to quality of paper, printing and binding, at an average reduction of 62 per cent. in the cost price. This contribution was most interesting, developing as it did the great efforts and perseverance, as well as the benevolence that had caused the preparation of the Scriptures for distribution to all nations and tongues.

An immense roll of paper was exhibited, made in a continuous sheet 2,500 yards long. A collection from Saxony consisting of 356 volumes printed at one establishment in the year preceding the exhibition was interesting, as developing the attention paid in that country to works for the public. The Egyptian Government had a collection of 165 volumes of books printed in the Arabic, Persian and Turkish languages; and a catalogue of the books published in Egypt.

Specimens of split paper, useful for removing letter press from the backs of engravings and wood cuts. The method of splitting paper of the thinnest texture is extremely simple: Two pieces of calico are firmly cemented on the sides of the paper and dried. By a gentle pull on each side, the paper splits into halves, one of which adheres to the calico on one side and the other to its opposite. The adhesion between the paper and calico being greater than that of the surfaces of the paper to each other. The split portion may then be removed by dampening and so loosening the paste between the calico and paper.

Book binding was illustrated in a great variety of style and excellence. Some exhibitors show the different stages through which a book passes in the process of binding—from the folded sheets to the finished and gorgeous book. There was a very interesting collection of specimens showing the present state of paper manufacture, and materials employed in various stages of preparation from the foulest rags to the most finished and perfect specimens of note paper for Royalty. The National Printing Office of France had a variety of oriental and other types, of very great merit, for which they received a Medal. Some paper from Russia exhibited a very great improvement in the manufacture of paper over that heretofore made in that country.

From the Ducal Foundry, Prussia, specimens of stereotype iron, and the Bible printed therefrom, was on exhibition. From the United States, there was a very respectable exhibition. Medals were awarded to Herrick of New-York, for superior ruling of account books; and to S. G. Howe of Boston, for a system of characters of an angular form, without capitals, for the use of the blind; and Honorable Mention was made to Bradley, Band & Co., of Boston, for cloth binding, and block gilding; to Gassett, Boston, for superior ruling account books; Mr. Adams, Boston, ruled account books, &c.; Sibell & Mott, New-York, Bank and account books; C. Starr, of New-York, binding works for the blind, with thickened margins, to prevent the embossing from being pressed out; E. Walker & Co., New-York, for a Bible, elaborately bound and ornamented, with a recess for a family register inside the cover.

Some very superior specimens, of Lithographic printing, of chromolithography, of printing in colors from wood blocks, and other descriptions of ornamental and artistic printing, showed the perfection which has been attained; these were exhibited from France, England, &c. In the French department, a very striking exhibition, by A. Mann & Co., of Tours, deserves particular notice, from the extent and variety, as well as superior execution of the various works which proceed from their press, one of the most extensive private establishments, it is claimed, in Europe. The book department is divided into three classes, books of education, church services and books for schools. They claim for their establishment, that the morals of their publications are irreproachable, the price is the very lowest, and the quality of materials superior, all which so far as I could judge from their exhibition, was fully confirmed. In this class, was exhibited the rude sketch on blotting paper and ink, exhibiting the first design of the Crystal Palace as made by Paxton. Viewed in connection with the magnificent building itself, it was an object of extraordinary interest, and will doubtless be preserved to the latest times. There were in this class, many other articles which it would be interesting to describe, did the limits of this report permit.

Class 18. *Fabrics woven, fitted and laid, shown as specimens of printing and dyeing.*—The improvements which have taken place in dyeing and printing within a few years, have been very great. Chemistry has been brought into co-operation with the manufacturer, and the result has been a wonderful advance, not only in the beauty of the fabrics, but in lessening the expense of their preparation for market. Connected with every important manufacture, the laboratory is to be found, and the advantages derived from the chemist in this class of articles are very great. The labor of weeks formerly, is now performed in one day. In the early stages of printing, only one color could be applied, now, as many as ten, are applied in constant succession. The French excelled in this department, and their fabrics presented a brilliancy and beauty of colors, as well as elegance of design, which I think were not surpassed in the exhibition. Prussia, Switzerland and England, however, showed great taste and beauty of finish, and in the India Department were fabrics that were most superior, and perhaps in many respects would be considered unequalled.

Class 19.—*Tapestry, Carpets, Floor Cloths, Lace, &c.*—The display in this class was of the most attractive character. The articles were arranged in different parts of the palace, so as to attract attention and at the same time develop their most striking qualities. From the extent which Carpets, Tapestry, &c., were shown, they occupied a very prominent part in the exhibition. Among the attractions in the Carpet display was one executed for her Majesty, Queen Victoria, by 150 ladies. The carpet was thirty feet by twenty. The pattern, designed and painted by the artist, was sub-divided into detached squares, which were worked by different ladies; and on their completion, the squares were re-united, so as to complete the design. In the pattern, consisting partly of geometrical and partly of floral forms, heraldic emblems are introduced. The initials of the ladies executing the work, are ornamentally arranged, so as to form the external border. This was used on the day of the opening of the exhibition, upon the platform on which the throne for Her Majesty was erected, and after the ceremonies had closed, and the Queen and her attendants had left, the anxiety of the people was so great to examine the carpet, that it would probably have been seriously injured, had not the police removed it at once.

From the East Indies were shown several admirable specimens of workmanship; and a silk carpet from Cachmere, was an article of great splendor and of immense value. Some fine samples of carpeting and rugs were shown from Persia.

The English exhibitors were much more numerous than any other nation, and nearly equal, in fact, to all the others. There was a great variety in the English exhibition, and some of them were of remarkable richness and beauty.

In the American department there was but one exhibitor, Lawrence of Boston, who received an Honorable Mention. Specimens, however, were shown of Brussels carpet, woven by steam power, by Mr. Bigelow of the United States, which had never before been accomplished, and will produce an entire revolution in the manufacture of this kind of carpets.

A very important improvement has been made in England, by which the wool, which has heretofore been mainly buried in the fabric, is now brought to the surface, and a carpet equally durable is made, with half the quantity of wool, and at half the former cost.

Austria.—A carpet was exhibited from Austria, made by Marie Louise, with the aid of several of her relations, and was interesting, as a specimen of the work of one who had borne an important part in the history of Europe, from her connection with the Emperor of France.

FRANCE.—The government manufactory of France received a Council Medal for Gobelins Tapestry, which for originality and beauty of design, as well as the extraordinary excellence of execution of the articles exhibited, gave it a pre-eminence over all others. For more than two hundred years, has this manufacture been carried on under the direction and patronage of the French government, and the great perfection of the Gobelins Carpets and Tapestry, has been the result of the attention which has been devoted to this one object for this long period of time.

The exhibitors in this class were from England, France, Belgium, Holland, Austria, Algeria, Zollverein, Switzerland, Denmark, Portugal, Tunis, United States, East Indies. The Tunisian carpets were curiosities, being worked with figures of men and women, but without any special skill.

LACES.—There was a very rich display of laces and embroidery, of the very finest and most costly description, as well as of the cheaper and ordinary fabrics for common use. A Council Medal was awarded to an English firm, for a new velvet and simla lace, suitable for shawls, dresses, ornamental, and useful purposes, and of great commercial importance. The application of machinery to the manufacture of lace, even of some of the finest kinds, has produced a great revolution in the trade. The very finest Honiton lace in England, is yet, however, wrought by hand. The power of the production by machinery as compared with hand labor, is said in the case of the bobbinet machine to be nearly as 30,000 to 5, and the lace produced by it, has in plain articles entirely superseded that made by hand.

CLASS 20. *Articles of Clothing, &c.*—This class includes articles for personal or domestic use, and though differing much in the character of the articles from the preceding classes, yet it was an important one in its application to the supply of the wants of all. Hats, caps, clothing of various kinds, boots, shoes, &c., were the articles exhibited. In this class there was a great variety from most of the countries on exhibition; yet not of such special es

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Austria, Zollverein, France, Wurtemberg, Sweden and Norway, Russia, Prussia, Nova Scotia and Belgium, were the principal foreign exhibitors in this class and presented some very fine articles. Austria and Zollverein were much the largest foreign exhibitors, and some of their articles were very superior, as were those of France, Prussia and Belgium.

The United States exhibition of Scythes by the North Wayne Co., was decidedly superior to any other in the exhibition, and the Axes and other edged tools of Simmons & Co., of Cohoes, New-York, were admitted to be without a rival. A very fine assortment of tools was also exhibited by a firm in Philadelphia. To each of these a medal was awarded. An Honorable Mention was given to A. B. Allen & Co., of New-York, who had some very superior Scythes and other tools on exhibition.

In the Sheffield department were to be seen goods of remarkable brightness, which had been exposed in the open weather upon the roof of a house for six days and nights, the bright parts having been preserved by a composition preventive of rust. It is a valuable preparation, and will afford great relief to families for iron and steel ware, when not in constant use, and to those who are shipping iron and steel goods. It was exhibited by Jones & Co., of Sheffield.

CLASS 22. *General Hardware, Locks and Grates.*—This was a very numerous class of articles—the number of exhibitors, in the English Department exceeding 800, and in the whole amounting, probably, to 1,500. A very great variety of articles came under the examination of the Jury, and their labors were unusually arduous. The number of medals awarded were three hundred and five, of which twelve were Council Medals. This class acquired unusual interest from the publicity given to the lock controversy, during the exhibition. Locks of two of the most celebrated lock makers in England, which had been considered proof against all attempts at picking, were opened by an American who had a lock on exhibition, Day & Newell's Parautoptic permutating Lock, of which we propose to take some notice hereafter.

There were many very fine specimens of iron castings of fountains, animals, statues, &c., for which Council Medals were awarded. But the most interesting, I think, as well as the most useful, were those exhibited by the Coalbrook Dale Company, Coalbrook Dale, Shropshire. The first single foundry was commenced two hundred years ago, and has been in the family of the present proprietors nearly one hundred and fifty years. The number of men and boys in the employ of the company, at the present time, is between 2,000 and 4,000. Their articles are of great variety—ornamental and other gates for Parks, Fountains, Domes, Chimney pieces and Grates. Every variety of Kitchen Ranges and furniture, vases, flower stands, chairs, and a great number of articles of amusement, are most admirably executed, and with a delicacy and beauty of finish which is seldom equalled.

The French sculptures in Bronze were remarkably fine, and were decidedly superior to any others. A variety of warming apparatus, of great beauty of finish and convenience of arrangement was shown. Chilson & Co. of New-York, received a Medal for their Hot-air furnaces, which commended themselves to the Jurors there, as they had so often done to our citizens here. An Honorable Mention, to Pond & Co., of Boston, for a cooking stove. Learned & Thatcher, Albany, exhibited two Chandelier stoves—Elihu Smith's Patent, which, for cheapness and convenience of arrangement and small amount of fuel necessary, appeared to me, deserving of special commendation. There, certainly, were no other stoves on exhibition which elicited, so far as I could judge, more numerous inquiries, and which appeared to give more satisfaction. But with such a multitude of articles to be examined and re-examined, it is not at all surprising that these have been omitted if they had commended themselves to the Jury as they did to me. A Medal was awarded to a Philadelphia firm, for Chandeliers, which were very creditable to our country.

Silas C. Herring's Salamander Safe, received a Medal, and it was equal to any shown at the exhibition. There was deposited in this safe, in my presence, £200 sterling, by Mr. Herring, and the safe locked, (having one of Day & Newell's Locks, I believe,) and notice placed upon the safe, that any person was welcome to the money, who could open the safe—the key being at the service of any one who chose to make the attempt. It remained for forty-five days *unopened.*

The exhibition of Locks was very extensive and of great excellence. CHUBB & SON, celebrated lock-makers, had a very fine exhibition of their locks, in great variety and most splendidly got up. They were exhibited as the Patent Detector Locks—are in use, or were, on the government vaults and offices, the Bank of England, and wherever safety was required. The Koh-i-noor diamond of the Queen, was exhibited in a case, with an arrangement for elevating and depressing the diamond without locking—and it was stated "that it was considered impossible to pick the lock or obtain an entrance into their receptacle." (This precious diamond was formerly valued at £3,000,000, but since it came into the possession of the British it was found to have been over estimated, and now, I believe, is not considered worth over £2,000,000—and many, who profess to be versed in the valuation of diamonds, estimate it much lower.)

Chubb's locks for ordinary purposes have each six separate and distinct movable tumblers and a detector. If a surreptitious attempt be made to open any one, it was said immediate notice is given by the detector on the next application of the proper key.

BRAMAH & Co., exhibited very fine samples of their various locks, and one brass case lock, exhibiting the number of changes their locks will admit of, amounting to upwards of 479 millions! In their shop window in Piccadilly, London, was displayed a large padlock with a standing offer of 200 guineas to any person who would open it with a single instrument. There were many others on exhibition from England, France, Portugal, Sardinia, Spain, Sweden and Norway, Tuscany, United States, Africa and Zollverein.

Soon after the exhibition opened, Mr. A. C. Hobbs, of New-York, who had charge of Day & Newell's locks, obtained one of Chubb's locks and opened it in the space of 10 or 15 minutes, in the presence of several gentlemen. This, on becoming known, excited much interest and led to a publication from Chubb & Son challenging the opening of their locks. Mr. Hobbs was permitted to make the attempt to open one of Chubb's locks which was placed upon an iron door to a vault built for the depository of valuable papers. I give the proceedings which took place on this trial.

"American Department,
Crystal Palace, July 21.

Gentlemen:—An attempt will be made to open a lock of your manufacture on the door of a strong room at 34 Great George Street, Westminster, to-morrow, Tuesday, at 11 A. M. You are respectfully invited to be present and witness the operation.

Yours respectfully,
A. C. HOBBS.

To Messrs. Chubb & Son, *St. Paul's Church Yard.*"

(Messrs. Chubb did not notice this communication.)

"London, *July* 22, 1851.

We the undersigned hereby certify that we attended, with permission of Mr. Bell of No. 34 Great George Street, Westminster, an invitation sent to us by A. C. Hobbs, of the city of New-York, to witness an attempt to open a lock throwing three bolts, and having six tumblers, affixed to the iron door of a strong room or vault, built for the depository of valuable papers, and formerly occupied by the Agents of the South Eastern Railway Company; that we severally witnessed the operations, which Mr. Hobbs commenced at 35 minutes past 11 A. M., and opened the lock within 25 minutes. Mr. Hobbs having been requested to lock it again, with his instruments, accomplished it in the short space of seven minutes, without the slightest injury to the lock or door, (having previously had the assurance of Mr. Bell that the keys had never been accessible to Mr. Hobbs, he having permission to examine the key holes only). We found a plate at the back of the door with the following inscription: "Chubb's new patent, (No. 161, 461) St. Paul's Church Yard, London, maker to Her Majesty."

Mr. Hardley, 26 Great Earl Street.
Mr. William N. Marshall, 42 Charing Cross.
Mr. W. Armstead, 35 Belitha Villas, Barnsbury Yard.
Mr. G. R. Porter, Putney Heath.
Mr. F. W. Winham, Effra Vale Lodge, Buxton.
Mr. A. Shanks, Robert Street, Adelphi.
Mr. S. Shanks, do do
Col. W. Clifton, Morley's Hotel.
Mr. Elijah Galloway, 42 Southampton Buildings.
Mr. Paul R. Hodge, 9 Adam Street, Adelphi.
Mr. Charles H. Peabody, 1 Norfolk Street, Strand.

The annexed remarks from the London Times on the Lock controversy, and the trial made upon Bramah's lock, by Mr. Hobbs, we give in preference to any remarks of our own, as the whole matter is treated with very commendable fairness, and atones for much which the Times took occasion to say of our articles in the early stages of the Exhibition.

"We believed before the Exhibition opened, that we had the best locks in the world, and among us, Bramah and Chubb were reckoned quite as impregnable as Gibraltar—more so, indeed, for the key of the Mediterranean was taken by us, but none among us could penetrate into the locks and shoot the bolts of these makers. In this faith, we had quietly established ourselves for years, and it seems cruel at this time of day, when men have been taught to look at their bunches of keys, and at their drawers and safes with something like confidence, to scatter that feeling to the winds. The mechanical spirit, however, is never at rest, and if it is lulled into a false state of listlessness in one branch of industry, and in one part of the world, elsewhere it springs up suddenly to admonish and reproach us with our supineness. Our descendants on the other side of the water are every now and then administering to the mother country a wholesome filial lesson upon th text, and recently they have been "rubbing us up" with rity which perhaps we merited for sneering at their short co in the Exhibition While we have been relying implicitly the artful arrangement of "tumblers" and such like devices, t have been carefully developing their ingenuity in picking a opening locks. A man makes a lock, and he brings it to a M chanic's Institute in New-York with a certain sum of money secured by it, which sum becomes the property of the successful operator, who can shoot back the bolt of the new contrivance. Instantly astute heads, and clever, expert hands are engaged in solving the mechanical riddle thus propounded to them, and so far have these dexterous manipulators carried their art, that their "open sesame" sweeps springs, tumblers, false notches, letter devices, and everything else before it. Mr. Hobbs is by far the most accomplished and successful of these performers, and he has come over to this country at a very opportune moment to teach our makers a very useful lesson. It is well known, however Mr. Chubb may wrestle with the statement, that Mr. Hobbs has succeeded, by perfectly fair means, in opening his locks as they have hitherto been made; no formal and deliberate trial has taken place between them to establish the fact, but it nevertheless remains undoubted, and the sooner Mr. Chubb improves his patent, so as to set Mr. Hobbs at defiance, the better for his own interests.

"Bramah & Co., have acted with more pluck, and have been beaten in a fair open field. They have acted with so much bold, open courage that even when Mr. Hobb's success was ascertained by us, we were reluctant to state the facts positively and circumstantially, until the award of the arbiters appointed on the subject, had been made. That document we now publish, and the public, we are sure, when they read it, will not think the less of a firm, which has been vanquished in a fair stand-up fight, maintained for so long a period, and against such extraordinary skill."

"Report of the Arbitrators, to whom the Bramah Lock controversy was referred:

"Whereas, for many years past, a padlock has been exhibited in the window of the Messrs. Bramah's shop, in Piccadily, to which was appended a label with these words; "The artist who will make an instrument that will pick or open this lock, will receive 200 guineas the moment it is produced;" and Mr. Hobbs of America, having obtained permission from the Messrs. Bramah, to make a trial of his skill, in opening said lock, Messrs. Bramah and Mr. Hobbs, severally agreed that Mr. George Rennie, F. R. S., London, and Professor Cowper, of King's College, London, and Dr. Black of Kentucky, should be the Arbitrators between the parties. On the 23d of July, it was agreed, that the lock should be enclosed in a block of wood and screwed to a door, and the screws sealed, the key-hole and hasp only being accessible to Mr. Hobbs; and when he was not operating, the key-hole to be covered with a band of iron, and sealed by Mr. Hobbs; that no other person should have access to the key-hole. The key was also sealed up, and not to be used till Mr. Hobbs had finished his operations. If Mr. Hobbs succeeded in picking or opening the lock, the key was to be tried, and if it locked and unlocked the padlock, it should be considered a proof that Mr. Hobbs had not injured the lock, but picked and opened it, and was entitled to the 200 guineas. On the same day, July 23d, Messrs. Bramah gave notice to Mr. Hobbs, that the lock was ready for operations. On July 24th, Mr. Hobbs commenced his operations, and on August 23d, Mr. Hobbs exhibited the lock open to Dr. Black and Prof. Cowper, Mr. Rennie being out of town. Dr. Black and Prof. Cowper, then called on Mr. Edward Bramah and Mr. Barzalgette, and showed them the lock open. They then withdrew, and Mr. Hobbs locked and unlocked the padlock, in the presence of Dr. Black and Prof. Cowper. Between July 24th and August 23d, Mr. Hobbs' operations were for a time suspended, so that the number of days occupied by him were 16, and the number of hours spent by him in the room with the lock was 51. On Friday, August 29th, Mr. Hobbs again locked and unlocked the padlock in the presence of Mr. George Rennie, Prof. Cowper, Dr. Black, Mr. Edward Bramah, Mr. Barzalgette, and Mr. Abrahant. On Saturday, August 30th, the key was tried, and the padlock was locked and unlocked with the key, by Prof. Cowper, Mr. Rennie and Mr. Gelbertson, thus proving that Mr. Hobbs had fairly opened the lock without injuring it. Mr. Hobbs then formally produced the instruments with which he had opened the lock. We are, therefore, unanimously of opinion, that Messrs. Bramah have given Mr. Hobbs a fair opportunity of trying his skill, and that Mr. Hobbs has fairly picked or opened the lock, and we decide that Messrs. Bramah & Co. do now pay to Mr. Hobbs, 200 guineas.

GEORGE RENNIE, *Chairman.*
EDWARD COWPER,
G. R. BLACK.

Holland Street, Blackfriars, Sept. 2, 1851.

This document is conclusive on the merits of the question. "This rough lesson will probably lead Messrs. Bramah & Chubb to devise some means for rendering their patents more secure, and we have no doubt they will succeed." "An attempt will be made, it is said, to pick the American lock, and when it is remembered that our cousins show several locks, all of which are represented as perfectly secure, it is high time for our lock makers either to show that the American patents are equally unsafe as their own, or to acknowledge themselves beaten, and endeavor to make better locks for the future."

The trial was made upon Day & Newell's lock, by one of the
most expert locksmiths to be found in England, and after a trial
of thirty days, the lock was returned by the judges, who wer
agreed upon, uninjured, the operator not having made an impre
ion upon it. So completely was the security of the Ameri
locks established, that they were ordered for the Bank of Eng
and in other directions, where safety was required—and
pany has been organized for their manufacture in Engl
which Mr. Hobbs is the managing director.

Prize Medals were awarded to the United States, to Da
for their lock (with special approbation,) to Adams &
lock; Arrowsmith, for Permutation locks; McGreg

bank lock, and the exhibitors claimed equal security with Day & Newell's, though they were not put to the test so far as I was informed.

Two Bell Telegraphs were exhibited from this country; one of which, C. Howland, exhibitor, received a medal. The other, exhibited by W. T. Brooks, New-York, Jackson's annunciator, appeared to me quite equal to Howland's but the Jury thought differently, and, doubtless for satisfactory reasons. G. Hotchkiss, of Broome County, exhibited his Noddle Iron and Tram Block, for saw mills, which have been much approved in this country. Their great simplicity and cheapness were recommendations which should secure their adoption where needed.

CLASS 23. *Working in Precious Metals, Jewelry, &c.*—This class contained many of the richest specimens of articles of vertu and luxury in the Palace. The exhibitors were from England and the continent; the United States not exhibiting until near the close, when a service of Gold plate was presented. The Electroplating was of a very rich and interesting character, and many of the articles were of such elegance of design, as well as perfection of finish, as to arrest the attention of those who were more attracted by ornament and display, than by utility alone. The Electro process was exhibited in the Palace. The operation is thus performed: Having placed silver in solution in a glass jar, which communicates with a battery, by means of a wire, a brass metal is attached to another piece of wire, and the metal being immersed in the solution; the wire that holds it is hooked on to the wires connected with the battery; the *instant* the contact of the two wires takes place the metal is covered with a coat of silver. By the same process, all Electro-plating is performed. Any metals may, by this process, be deposited; and one part of an article may be coated with gold another with silver, a third with platina, and so on. I was at Birmingham, and examined Elkington & Co.'s establishment, one of the most extensive in the country, and where articles of every variety are manufactured. A Council Medal was awarded this firm, for their artistic application of the Electrotype

France, Zollverein, Russia, Switzerland, Austria, Belgium, Hamburg and Sardinia exhibited, most of them largely. Jewels and Jewelry were among the articles for which prizes were awarded. The Queen of Spain's Jewels, exhibited by Lamorier, of France, were the most attractive in the exhibition, and a Council Medal was awarded.

A large piece of native Gold from California, worth from $3,000 to $4,000, was exhibited by a London firm. A service of Gold Plate made of California gold, a testimonial to E. K. Collins from the citizens of New-York, for establishing the American Steam Packet Line, attracted much attention for its richness and the remarkable purity and beauty of the metal. Some of the exhibitors of Gold and Silver Plate in the English department had very extensive collections; one, more than one hundred articles of the very richest and most expensive character, valued probably at more than $100,000. A Silver Table Top, 55 inches in diameter, weighing 900 ounces, manufactured for the Pasha of Aleppo by a Birmingham firm, was among the most expensive of the articles. I select from the Zollverein department one of the rich articles which received a Council Medal, as illustrative of much of this department, in its liberal expenditure of money on articles, in themselves of little moment—a sett of Chessmen and Board in *Renaissance* style (as it is called); the squares of the Board alternately Tortoise Shell and Mother of Pearl. The framework of the stand is silver and gold, inlaid with rubies; each corner the bust of an angel, the wings in silver and blue; the sides ornamented with silver swans and festoons of gold and rubies. The Chessmen are in gold and silver; the principal figures are costume portraits of Emperors of Germany and Kings of France; their retinue, Knights and Castles mounted on elephants, and men at arms for the pawns. Rubies are profusely introduced upon the dresses of the principal personages and the pedestals.

The great Koh-i-noor diamond, or mountain of light, belonging to the Queen, was exhibited in this class. Its value is noticed elsewhere; its brilliancy was not remarkable, and all the efforts made to display it to advantage failed to secure that brilliancy which many of the other diamonds had. As this class was peculiarly devoted to those articles of vertu and luxury which alone find their way to the habitations of the wealthy and are not among those things which specially contribute to the real comfort of our world, a description of the varied treasures which afforded to the visitors that saw them probably as much real enjoyment as to the possessor, would not, it is presumed, be desired.

CLASS 24. *Glass.*—This was a very interesting and useful class, and the character of the articles exhibited such as to reflect great credit upon the exhibitors. The glass with which the Palace was mainly covered, made at Birmingham, was a striking illustration of the extent to which the manufacture is carried in England. The panes of glass on the Palace were 49 inches long. A Glass Fountain, the ornament of the Transept, was 27 feet high, of pure flint crystal, contained upwards of 4 tons of crystal glass; the principal dish was upwards of 8 feet in diameter, and weighed before casting nearly a ton. This was manufactured at Birmingham, and was said to be the largest production of the kind ever made. It was one of the most attractive, of the many beautiful things in the Palace. Specimens of glass were exhibited in all stages of its manufacture, and models of furnaces, and the retorts and vessels used in the manufacture. Many very rich samples of colored glass were shown from several countries: England, Zollverein and Prussia, each exhibited some very rich specimens. The process of combining colors is thus described: The object being formed first in the white transparent and colorless glass and allowed to cool until solid, is then dipped for a moment in a vat of colored glass in a state of fusion, and being suddenly withdrawn it takes away a thin coating of colored glass which immediately hardens upon it and becomes incorporated with it. The article is then shaped by the glass maker, and if cut, those parts which are cut will display the clear transparent glass, those not cut remaining coated with the color.

Samples of plate glass, some of which were of
ever manufactured, were of extraordinary excelle
glish and French departments.

Chandeliers in great varieties were shown; one
lights, admirably and effectively arranged. From t
Brooklyn Flint Glass Company, celebrated with us
of their flint glass, exhibited some very fine spec
plain glass, to which a Medal was awarded. It co
ably with any glass on exhibition of that descript
purity and fineness was very much applauded b
writers, in their description of articles on exhibitio

CLASS 25.—*China, Porcelain, &c.*—There was a larg
this class of every variety, from the richest and most ex
to those of ordinary use. From the Sevres manufac
articles were exhibited surpassing anything of the k
seen, and a Council Medal was awarded for the h
has been attained. Porcelain from England, Franc
mark, Zollverein, Portugal and Austria, were exh
several of the continental nations, the exhibitions w
ernment establishments. Of the common earthen
glish was far superior to any other.

CLASS 26.—*Furniture, Paper Hangings, Papier*
class was very largely represented, and all that lux
sire, or moderate means need, was here most strikin

In one of the London Journals, the foreign contr
thus characterized. "France, Austria, Spain, Germ
and the United States, have furnished us with the fin
of their several excellence in cabinet-making, in each
be traced the mechanical skill and prevailing taste
time. France is light, elegant, yet convenient in th
objects; Austria is heavy, luxurious and colossal,
two exceptions; America is smart, original and ada
Spain has sent a Table, the wonder of the world, of

marqueterie-workers; nor ought we to omit the equally surprising contributions from the Eternal city, whose mosaic work is one of the marvels of the exhibition."

The French furniture, for elegance of finish as well as beauty of design, was superior to any on exhibition; and three of the Council Medals were awarded to France, and one to Austria. There was much in the English Department that was highly finished, and gorgeous in decorations, but as compared with the French, I think, decidedly less attractive.

The Exhibition from the United States was not large, yet our chairs, bedsteads &c., were attractive to the visitors, and some of them novelties, which many had never before seen. Our rocking chairs, and the chairs of the Troy Company, and the reclining chair of Ragan of Philadelphia, were examined with no little interest. An Honorable Mention was made of the Reclining Chairs; and the chairs of the American Chair Company, Troy, are being manufactured in England, and are much esteemed.

Paper Hangings, and Papier Mache goods were largely exhibited, and of great variety and richness. The Papier Mache articles were remarkably attractive, and articles of almost every variety were shown, many of them of the richest description, inlaid with with pearl.

Class 27. *Manufactures in Mineral Substances.*—This class comprises the minerals used in building and decorations; comprising the manufacture of ordinary stone for buildings and slate, cement and artificial stone, marble, granite and Ornamental work. A table in Roman Mosaic from Rome, was awarded a Council Medal, and it well deserved this distinction. Malachite manufactured into various articles of furniture and decorations, from Russia, received a Council Medal. In the copper mines from which the specimens exhibited were taken, a vein of Green Malachite has been opened, which is peculiarly rich and of very great extent—measuring at the top 9 feet by 18, and the portion uncovered contained, it is supposed, half a million pounds of pure Malachite. It admits of a high polish, and was exhibited in large slabs, table tops, vases, doors, &c., and proved one of the most attractive departments of the Exhibition. The articles exhibited were sold, it was said to a wealthy Londoner, for £10,000—nearly $50,000.

An Honorable Mention was given to the Maryland Soapstone Co. for articles made of Soapstone; and for a Water Vase, from Ohio, manufactured from brick clay.

Class 28. *Manufactures from Animal and Vegetable substances, &c.*—In this class, India Rubber and Gutta Percha goods were shown extensively, and the extent and variety of uses to which these substances are applied, were perfectly illustrated. The United States and England were much the largest contributors, the exhibitors from the continent being very few. Goodyear, from the United States, received a Council Medal for his India Rubber Goods, and I think his excelled all others in their extent, as well as their adaptation to the various purposes for which they were designed.

A new article, India Rubber Globes, which I had never before seen, was shown by him. They are very convenient, can be inflated instantly, and suspended for use, and when not wanted, can be packed away occupying very little space. They were much admired. Pontoons were exhibited, formed of coarse India Rubber cloth, and were such as were used by our troops in the Mexi can Campaigns. They can be filled with air in a few minutes, and permit the passage of troops over rivers, and again emptied, and are transported with little trouble. Carriage Wheels, with Vulcanized India Rubber, called noiseless wheels, were shown. A medal was awarded to the Hayward Rubber Co., United States, for shoes. To S. C. Moulton, for India Rubber goods. To J. Fenn, of New-York, for beautiful specimens of Ivory work, combs, &c.

Class 29. *Miscellaneous Manufactures.*—This, as may be supposed, was a very miscellaneous department, embracing articles that did not belong, properly, to any other class, and like these classes every where, was composed of the most heterogenous materials that can well be imagined.

There were Prize Medals awarded to the United States for fancy Soap, to Bazin, Xavier, Philadelphia; to J. Hauel, Philadelphia, celebrated, the world over, for toilet soaps; J. K. St. John, Buffalo, a very valuable preparation called Cadwell, Payson & Co.'s "Excelsior" Soap. Maryland, for collection of produce; and preserved Peaches, from Cincinnati, Ohio. There were, in this class, two very interesting collections; samples of the imports of the towns of Liverpool and Hull. The Liverpool collection embraces the following list of articles from the United States and North America, which will doubtless be of interest.

Pigs Hair,
Polar Bear skins,
Otter, "
Oppossum, "
Gray Squirrel, "
Mink, "
Sperm Oil,
Bear's Grease,
Tallow,
Bees Wax,
Peppermint, from N. Y.,
Cranberries,
Hickory Nuts,
American Chestnuts,
Pink Root,
Sassafras Root,
Sassafras Bark,
Rosin,
Lathe Wood,
Hops,
Tobacco,
Lead Ore,

Turpentine,
Quercitron Bark,
Timothy Seed,
Clover Seed,
Rice,
Wheat and Flour,
Indian Corn and Meal,
Cotton,
Black Birch Timber.
Cedar (Pencil,)
American Ash,
Birds' Eye Maple,
American Walnut,
Texican Oak,
Masts and Spars,
Pine Timber,
Oars, &c.,
Chromate of Iron,
Phosphate of Lime,
Barytes,
Felspar,
Asphaltum.

Candles were shown in great perfection, and the quality was remarkably superior. Some from New-York were apparently equal to any exhibited. The aid of Chemistry has been sought in their manufacture with great success, and candles are preferred for household use, to a very large extent in England.

Corn Brooms, from this country, were exhibited, of very great perfection, and they attracted no little attention as they were objects of curiosity to the great portion of the visitors who had never before seen a broom of this description. D. D. T. More, of Watervliet, New-York, had some very superior ones, and all on exhibition were well made.

Maps.—There was a number of exhibitors of Maps from this State, and though in point of execution the maps did not equal many exhibited, yet the very moderate price at which they were sold, attracted notice. Bidwell, Colton, Disturnell, New-York, and others, were exhibitors. Mrs. Emma Willard, Troy, exhibited her educational charts, accompanied by instructions for their use in schools. These elicited frequent inquiries. A painting of wild flowers, of Western New-York, by Miss Agnes Jeffreys, of Canandaigua, was very attractive.

Preparations of stuffed animals were shown in this class. Among the most curious collection was one of Ploucquet in the Zollverein department. He had a museum illustrating the story of "Reynard, the Fox," in his own skin, in all the different characters described in the ancient romance; and a very striking collection of Birds, and animals representing scenes from nature, most life-like illustrations. A Boar hunt was also illustrated to perfection. A Medal was awarded him. A very fine collection of Birds and small animals, prepared by J. A. Hurst of Albany, was exhibited, and there were few collections which, for its extent, were more artistically arranged.

In the India department there was a very interesting collection of clay figures, representing the various Hindoo arts and profesions, manufactured in India. And from Turkey, from the Sultan, a collection of pipes that excelled any thing of the kind I have ever seen.

Ezekiel Page, New-York, exhibited a large assortment of his celebrated oars, which secured much favor with the watermen and very large orders were received, and I am informed that he has arranged for their manufacture in London.

CLASS 30. *Sculptures, Models, &c.*—The exhibition in this class was extensive, and most of it of a high character as works of art and skill, but as I have no pretensions, as a connoiseur, in this department, and as a mere description would be of little interest, I shall briefly allude to it.

From this country, POWERS' GREEK SLAVE was the most finished work, and although it received only a Prize Medal, it was, in the opinion of many, entitled to a Council Medal. A young artist, by the name of Stephenson, from this country, exhibited a statue of a wounded Indian, which was a very striking one, and possessed much merit, and several of the distinguished sculptors at the exhibition expressed the highest admiration of it. A Council Medal was awarded to KISS, of Berlin, for the Amazon and Tiger, cast in zinc and bronzed. I believe the justness of this award was acknowledged by all. A model of it is to be seen at the Agricultural Rooms. Baron Marochetti's Coeur de Leon in plaster; Phryne, in marble, by Pradia, France; and Glycera, in marble, by the late R. J. Wyatt, of England, were the other subjects which received Council Medals. The justness of these awards was questioned by some who were competent judges. There were some admirable exhibitions of Chromolithography, for which prizes were awarded.

I have concluded what I have deemed necessary to remark in relation to the articles on exhibition. I have but glanced at the Exhibition itself—as it was entirely impracticable, within any reasonable limits, to have given even a notice of the offerings of 17,000 design has been to call attention to those portions which were, in my opinion, most useful to this country, and to such of the articles as were worthy of notice from their ingenuity, or from other circumstances. There were exhibited, from this country, a very great variety of useful articles, which I have not had time nor space to notice.

I have given, in connection with this report, a list of the contributions from this State, the awards made to this country, and a list of the jurors selected from the United States, so far as they were registered by the Royal Commissioners. I have taken the list of articles entered in this State, from the minutes of the special committee appointed by Gov. Fish, which includes the articles entered previous to the sailing of the St. Lawrence, and were under the charge of Mr. C. F. Stansbury, who on his arrival, took charge of the United States Department, and continued to act until the arrival of Mr. Riddle, the commissioner selected by the Central Authority at Washington.

It would have been gratifying to me, while at the Exhibition, to have made observations, more fully than I was enabled to do, on account of my engagements as one of the Jurors. The Jury upon the class to which I was appointed, Agricultural Implements and Machinery, could not complete their labors until some weeks after the other jurors had finished theirs, and made their reports. The importance, however, of giving attention to the duties connected with the trials of implements before the Jury, was deemed paramount to every other consideration, and I therefore, to the best of my ability, devoted myself to the completion of that portion of my duties. The result has been such as to leave no cause for regret, that so much time was devoted to the subject, as I am satisfied, that without a thorough trial, it would have been impracticable to have arrived at practical results which would have been satisfactory to the great number of intelligent gentlemen present from the various countries represented, who were deeply anxious to ascertain everything that would be likely to be advantageous to the industrial interests of their respective countries.

It is impossible to anticipate all the beneficial results that will flow from this great gathering of the people, and the exhibition of the products of the industry of all nations. That it is to have a most important and salutary influence upon the industrial progress of the world, appears to me most manifest. Its bearing upon the social condition of the world, cannot, I think, be otherwise than gratifying to every well wisher to the progress and advancement of our race. Here, for the first time in the history of the world, have the representatives of every nation of importance met together in friendly intercourse, to show each other what was the state of their domestic industry, in its various departments—and to learn from the contributions of other countries, where they were excelled, and in what direction improvements to their advantage might be secured. Here too was shown, by the very exhibition itself, that the best interests of each nation could be far more profitably secured by this peaceful intercourse, than by any other means whatever; and a lesson was here most strikingly taught, of the dependance which after all, exists among nations. By a wise ordination of Providence, it is most manifest, that every portion of the Globe where civilization and science, with all their attendant blessings have been enjoyed, has some advantages not peculiar to other portions of the world, and by which they are made beneficial to others, receiving from them like returns.

It appears to me that some striking peaceful lessons were given that will not soon be forgotten, and though commotion and contention may and doubtless will continue, yet the influence of this friendly meeting of the nations of the world will tend to soften the asperities of national differences and will, I trust, in not a few instances prevent the resort to arms to avenge fancied or real wrongs, and lead to the adoption of some measures that will secure redress of a peaceful and happy character.

It may well be imagined that this exhibition will be a starting point for the development of the inventive talent and ingenuity of the world. Here was shown, to a good degree at least, the progress which has been made, the perfection which has been attained in the various department of arts, manufactures, mechanicism and science. Here the inventor saw the machine exhibited which accomplished the very thing he had long aimed to secure, but without success. The manufacturer, too, here discovered a perfection in the process connected with his department which he had long desired, but perhaps scarcely hoped ever to see accomplished. Who can tell, the importance of the invention of the Power Loom of Bigelow for weaving Brussels Carpets, which here for the first time was made a reality before the world—accomplishing what had baffled hitherto the skill of the mightiest intellects of the old world; which had been ardently and for years unsuccessfully devoted to this object, and which, but for this exhibition, might long have been devoted to the same end without success. Now a new field is opened for the inventors of the world, and we may anticipate that new and valuable inventions will be brought forth in this branch of domestic industry, when the talent of the world shall be brought to bear upon new discoveries which will secure advances in this department. I might illustrate this I think equally satisfactory in almost every portion of the exhibition, from articles exhibited or inventions for the first time made known before the world.

It appears to me that the nations here represented will, in a measure, be prepared to commence from the various points of excellence which the exhibition presented, and every effort of mind of the inventor, the mechanic, the manufacturer and the artizan will sooner or later be made to tell favorably upon the world's progress in all that contributes to its well being.

To those present, one of the most interesting facts connected with the exhibition itself was, the expression of surprise and astonishment which were often expressed by learned, scientific and intelligent men, in almost every station of life, at the discoveries made at the exhibition, showing that it was making a deep impression upon many minds in the direction to which I have referred. I have no doubt that the number is not small of those who have discovered on a careful examination of the articles presented, that the very thing which was present to the mind, but which as yet could not be fully elucidated and brought out on real working principles, was here practically developed; and that now, instead of devoting years of labor to the accomplishment of the desired object, an opportunity has been presented for the employment of all their talent and ingenuity in the attainment of still higher perfection in the departments to which their energies have been devoted.

Some striking facts, it appears to me, are developed in a comparison of the contributions from different countries. From many of the Continental Nations, the Government comes forward as an exhibitor—and in these cases, the exhibitions, by individuals, are comparatively few—and here great prominence is given to rich and luxurious articles, prepared and designed for the few, as compared with those made for the masses of the people. This was peculiarly observable, on a hasty examination even, of the exhibition, and led many, in its early stages, who were attracted by the splendor and show of this class of articles, to speak very lightly, indeed, of the contributions from this country, which were of an entirely different character.

The exhibition from the United States, and that from England, to a very great extent, showed that private enterprise had furnished the contributions exhibited—and so far as this country was concerned, the character of our contributions was such as to meet the wants and necessities of the great body of the people. The exhibition was a most instructive lesson as to the direction which improvement takes, when left to the free and independent energies of the people themselves—and it appeared to me, during the progress of the exhibition, and especially towards its close, that this impression was deepening upon many minds—and producing most salutary effects, leading many to think seriously of the great advantages which must, of necessity, result from affording a free scope to any people, to exercise their talent and ingenuity for the benefit of themselves and others, instead of being restrained by arbitrary restrictions and customs which confined them and their posterity, to one round of business from which no deviation could be made.

I have not attempted a critical comparison between the industrial products shown, which would illustrate, very satisfactorily, the capabilities of the respective countries, as developed in the Exhibition. It is very desirable that this should be done by some one qualified for the work, and who devoted himself specially to it. Should this be performed with care, and the results given to the world, it will, doubtlessly prove one of the most practically useful lessons which can be drawn from this collection of the products of the world.

There are lessons, however, to be drawn from this Exhibition which will prove highly useful and important to the United States. In all that relates to the first principles of design, in the various branches of arts and manufactures, we are very deficient as compared with many of the Continental Nations—and this remark also applies to Great Britain, to a very considerable extent. The great superiority of several of the Continental Nations, and of India, was most obvious to every careful observer. In some of the nations, schools of design have long been in existence, and the beauty of their designs in various manufactures and fabrics, was most striking as compared with others. The Indian Department also furnished specimens of art certainly equal, if not superior, to any thing on exhibition. That an improvement will be most favorably developed in the manufactures of England, as well as in this country, I think cannot be questioned. Evidence of this has already appeared in England, since the close of the Exhibition, as the following notice of the selections made from the Exhibition for the Government School of Design will show.

It is said, "The Indian display has, as might have been expected, contributed most largely to this collection. The best eastern skill in muslins and other textile fabrics, has been secured for the instruction of our designers. Specimens of metallic inlayings, enamels and earthen ware have been purchased to teach gracefulness of form and harmonious arrangement of colors. The objects selected from India, promise to exercise a most favorable influence upon our industry, in a large number of departments. Next to India, selections have been made chiefly from France—enamelling from Sevres for the instruction of our potters—and textile fabrics from Tunis and Turkey, and ornamental hardware from Belgium."

I shall be greatly disappointed if many of our citizens who were there, interested in the manufacturing establishments of this country, have not availed themselves liberally of articles exhibited, which will enable them to give new beauty and finish to their fabrics, and successfully, to compete, eventually, with the manufactures of any other nation.

In all that pertains more especially to the domestic and industrial pursuits, in which the great masses of every nation are interested; lessons will be taught through the exhibition, to the nations on the Continent and the Eastern world, that will eventually, though probably not as rapidly as in the former case, advance these nations who are evidently greatly deficient, and whose citizens at the Exhibition, for the first time probably, were made fully conscious of the extent of their deficiency. The exhibitions from Great Britain and the United States will prove most instructive to these nations; and the large orders which were given for articles for these various countries, showed that they were appreciated, and that an effort would be made to introduce them into practical use where heretofore they were entirely unknown. The representatives from the agricultural society in Normandy, one of the best cultivated portions of France, selected ten varieties of plows from those on exhibition by Starbuck, of Troy, and they assured me that they anticipated more advantage to their district of country from the introduction of these implements than from any other cause connected with the Exhibition. The same may be said of Switzerland, where our implements were taken, as well as various other portions of the Continent. This is rendered more probable, as the demand for our implements from various portions of Europe, has very largely increased since the close of the exhibition;

tutions are admirably adapted to the development of the talent and ingenuity of our citizens, and the testimony given by a leading Journal in England, is appropriate, in elucidating this fact.

The writer, in speaking of the contributions from the United States, at a late day of the Exhibition, after dwelling at length upon the very different character of the contributions from the continent, and from England says: "Their industrial system, unfettered by ancient usage, and by the pomp and magnificence which our social institutions countenance is essentially democratic in its tendencies. They produce for the masses, and for a wholesale consumption. There is hardly anything shown by them, which is not easily within the reach of the most moderate fortune. No Government favoritism raises any branch of manufactures to a pre-eminence which secures for it the patronage of the wealthy. Everything is intrusted to the ingenuity of individuals, who look for their reward to public demand alone. With an immense command of raw produce, they do not, like many other countries, skip over the wants of the many, and rush to supply the luxuries of the few. On the contrary, they have turned their attention eagerly and successfully to machinery, as the first stage in their industrial progress. They seek to supply the short comings of their labor market, and to combine utility with cheapness.

The most ordinary commodities are not beneath their notice, and even nursery chairs are included in their collection of "notions." They have beaten us in Yacht building, they pick our best locks, they show us how to reap corn by machinery, and to make Brussels carpets by the power loom. Our coopers will hear with dismay, and our brewers with satisfaction, that by an invention of theirs recently introduced into the Exhibition, one man can do the work of twenty in stave-making, and far more efficiently. Such triumphs do not much affect the mechanical superiority of the mother country, but they serve to show, that while on the one side nations less free and enlightened than ours, teach us how to throw a luster and grace over the peaceful arts; our own children are now and then able to point out how we can improve and extend them."

I have given these remarks, because they were drawn out by the results of the trial of our implements, which led to a more candid and thorough examination of all we had on exhibition, and elicited this tribute to American Institutions, and the enterprize of our citizens; and it is also the more readily given, as it was the very conclusion, which at an early day in the Exhibition, was presented to a distinguished Journalist, as the one to which he would be constrained to come, when an opportunity was afforded us, of practically demonstrating the value of our implements, which were then untried. It is important also, as showing the great change which had taken place in the public mind in regard to the American quarter, which instead of being the "Prairie Ground," as in derision called, became the observed of all observers.

As a further evidence of the practical character and adaptation of many of our articles to the wants of the age, I give another extract from the same journal, in an article giving an account of the progress made by the British and Americans through the trials of the season. After alluding to the British portion of the contributions, it is remarked of the American, "On the other hand, it is beyond all denial, that every practical success of the season belongs to the Americans. Their consignments showed poorly, at first, but came out well upon trial. Their reaping machine has carried conviction to the heart of the British Agriculturist. Their revolvers threaten to revolutionize military tactics, as completely as the original discovery of gunpowder. Their Yacht takes a class to itself. Of all the victories ever won, none has been so transcendant as that of the New-York Schooner. The account given of her performance, suggests the inapproachable excellence attributed to JUPITER by the ancient poets, who describe the King of the Gods as being not only supreme, but having none other next to him. 'What's first?' 'The America.' 'What's second?' 'Nothing.' Besides this, the Baltic, one of COLLINS' line of steamers, has 'made the fastest passage yet known, across the Atlantic,' and, according to the American journals, has been purchased by British agents 'for the purpose of towing the Cunard vessels from one shore of the ocean to the other.' Finally, as if to crown the triumphs of the year, Americans have actually sailed through the Isthmus, connecting the two continents of the New World, and while Englishmen have been doubting and grudging, Yankees have stepped in and won the day. So we think, on the whole, that we may afford to shake hands and exchange congratulations, after which we must learn as much as we can from each other." In concluding another article on the Exhibition, it is said, "Great Britain has received more useful ideas and more ingenious inventions from the United States, through the exhibition, than from all other sources."

I have given these extracts in preference to any remarks of my own, on the general success of our contributions at this Great Exhibition. They show, most conclusively, what were the opinions of those competent to judge, as it regarded that class of our articles which every American at the Exhibition, familiar with them and our country, claimed as illustrative of our improvements, and as showing the advances which had been made—and this testimony is the more valuable, as given by those who had, at an early day, committed themselves by their published opinions of the meagerness of our Exhibition, and the inferiority of our articles. With a manliness, however, which I found every where among intelligent gentlemen in England, when the trial demonstrated the value of our articles, the amende was made in the fullest and most gratifying manner.

I am fully sensible that, as a country, we have much to learn in every direction, and this has been, to my mind, most clearly shown in the Exhibition; and I shall be greatly mistaken in my countrymen if they do not largely profit by the lessons which this great Exhibition has taught them. Not an intelligent American who visited the Exhibition, and examined its contributions with care and attention, but must have been led to the conclusion, that in it there was much every way calculated, if rightly improved, to benefit his country—to enlarge not only our views as to the capabilities of other countries, but to satisfy us of our deficiencies and to encourage us so to direct our energies to still higher attainments in every branch of domestic industry; that we may, as a nation, not only be independent, in a great degree at least, of other countries, so far as the leading articles necessary for our own comfort are concerned, but also be enabled to supply others with a great variety of articles which heretofore we have never done.

It appears to me from all that has been developed by the Exhibition, so far as the character of our country is concerned and its resources have been shown, the result of this meeting together of the nations of the world in friendly rivalry, will not prove unfavorable; and if we but improve, as we may and as I trust we shall, from the lessons here given, we shall be prepared when another convocation shall be held, after a few years shall have elapsed and time has been given to develope the fruits of this, to show to the world that we have not been inattentive to these lessons. We should, however bear in mind that the same influences which operate upon us will more or less affect others, and that no ordinary attainments will enable us fully to compete with those who are now far advanced in many departments and who may be expected to redouble their efforts to retain a position which they have long maintained.

The Exhibition most clearly showed, that science and art have done much for the advance which has been made in every branch of manufacture, and I think it may with safety be affirmed that whenever science or art was put in requisition, there progress was shown superior to others. This lesson I trust will not be lost upon this country, but that it will be so improved as to lead to renewed efforts to a more complete and thorough education in every branch of arts and manufactures, that we may not only keep pace with the world's progress, but make such advances as will secure to us a pre-eminence.

A strong desire was manifested among the representatives of foreign nations, that an exhibition of a like extended National character should be held in this country at some future period. This exhibition has brought our country to the notice of the world as it has never been presented before; and an anxiety is manifested to come and see what this new world is doing, not only, but how it is, that in so short a period it has been able to compete successfully upon the theater of this Great Exhibition with the oldest nations of the world. Let us then be prepared for that event, and when prepared, let us give, as a Nation, such an opportunity for the world to be present and compete with us, as has been afforded us by the liberality of England. It will be a proud day for our country and for those who may be spared to participate in an exhibition which, so far as the progress which shall be made in every thing that will have a bearing upon the best interests of mankind in every department, will doubtless as far exceed the *Great Industrial Exhibition of all Nations of* 1851, as that has excelled all that have preceded it.

I cannot, in justice to my own feelings and sense of duty close this report, without recording my testimonial to the ROYAL COMMISSIONERS and the EXECUTIVE COMMITTEE, under whose direction and management, the whole Exhibition was arranged and carried out, for their unwearied exertions to afford every possible facility for a fair and impartial adjudication upon the articles which were presented. Their efforts were unremitting, and their arrangements such as to secure as far as could be done, a thorough and satisfactory examination of everything presented for the decision of the Jurors.

To His Excellency Mr. LAWRENCE, the United States Minister, every American present will unite with me in an award of most heartfelt thanks, for his endeavors previous to and during the exhibition, to secure a favorable result for the contributions of his countrymen, and at the same time, to present in a proper view the country itself through the Exhibition. The favorable result of our whole exhibition was in no small degree secured by his exertions, in bringing properly before the Royal Commissioners and Jurors, the contributions from this country. His attentions to his countrymen, in the midst of his numerous and pressing official engagements, were most gratifying, and left nothing for them to desire, which his kindness and foresight, had not provided for their gratification, and for a proper appreciation of every thing in the country which it was desirable for them to become familiar with.

To Mr. George Peabody of London, whose name is familiar to Americans who have visited Great Britain for years past, every American connected with the Exhibition, owes a debt of gratitude which cannot be repaid. His attentions were unremitting to his countrymen, and to his kindness and liberality were they indebted, on a foreign shore, for a suitable opportunity of paying due attention to that day memorable in our history, as the day on which we were declared free and independent. And in addition to this, it was owing to his liberality in furnishing the necessary means, that the contributions from this country were arranged in a manner creditable to the country.

Mr. Pishey Thompson of London, long a resident in this country, was a most valuable and discreet friend and counsellor to Americans; myself as well as many of my countrymen, were under great obligations to him, for his unremitting exertions, to contribute in every way in his power to the advancement of our interests, and in securing for us a proper position in the Exhibition. I feel that this tribute to him, is justly due for his most praiseworthy and efficient aid.

The United States Commissioner, Edward Riddle, Esq., had very arduous duties imposed upon him by his position, and while present, devoted his entire energies to their discharge. In his absence to this country, during the most laborious part of the Exhibition, his Assistant, N. S. Dodge, Esq., acted as Commissioner, and discharged his duties with great credit to himself and with benefit to the exhibitors. Charles F. Stansbury, Esq. of Washington, who had charge of the American department, previous to the arrival of Mr.

Riddle, did good service to this country, and I anticipate from the mission with which he was subsequently charged, to report upon the exhibition to the Department of the Interior, that one of the most valuable contributions will be received from him which the exhibition has called forth.

There were many other gentlemen who were officially engaged in the management of the Exhibition, to whom I would most gladly tender my thanks for the very many attentions received from them, which very materially facilitated the discharge of the duties imposed upon those who were connected with the Exhibition either as jurors or exhibitors.

To Your Excellency, I am greatly indebted for the Honor of attending, in behalf of our State, this Great Exhibition of Industry. I have endeavored to the best of my ability to discharge the trust that was reposed in me; if I have failed in doing so, it has not been from want of an ardent desire to do all in my power, fairly to present the claims of the citizens of our State and of our country, as illustrated in the contributions which were presented.

In receiving my commission at the hands of Your Excellency, you were pleased to say to me, "I expect you faithfully to represent the interests and honor of the State of New-York, whose representative you now are." Ever bearing in mind the injunction I received, I endeavored so to fulfil the duties of my appointment, as to afford no cause for regret when those duties ceased; and in presenting to Your Excellency this report, imperfect as it is, I submit it, as evidence of my earnest endeavor faithfully to carry out the desire you expressed.

I am most respectfully yours,

B. P. JOHNSON.

ALBANY, March 15th, 1852.

LIST OF AMERICAN JURORS

AT THE EXHIBITION, AS PUBLISHED BY THE ROYAL COMMISSIONERS.

Class 3. Hon. Ashbel Smith, Texas.
4. Hon. E. S. Duncan, Virginia.
5. Robert McCarthy, New-York.
Sub-Jury, for Carriages.—O. McDaniel, New Jersey.

Class 6. S. Webber, Massachusetts.
7. Dr. J. V. C. Smith, Virginia.
8. A. Whitney, Virginia.
9. C. M. Lampson, London.
B. P. Johnson, New-York.
10. R. A. Leslie, R. A., London.
Sub-Jury, Musical Intruments.—Dr. J. Robert, Black, Kentucky.
Sub-Jury, Surgical Instruments.—Dr. Thomas, Chadbourne, New-Hampshire.

Class 11. Col. R. E. Coxe, Pennsylvania.
15. N. Kingsbury, Connecticut.
John H. Swift, New-York.
Frederick Schwann.
16. J. S. Cunningham, Virginia.
17. Henry Stevens, Vermont.
18. J. M. Beebe.
20. Elliot Cresson, Pennsylvania.
22. Hon. Horace Greely, New-York, (Chairman and member of Council of Chairmen.)
24. Lucius C. Duncan, Louisiana.
28. Rev. Gorham D. Abbot, Maine.
29. W. K. Smith.

AWARDS,

Made by the Royal Commissioners, to American contributors at the Great Industrial Exhibition of all nations at London, 1851.

Class I: Mining &c. *Prize Medals.*—Adirondack Steel, and Iron Company, New-York, for Steel and Iron.

Morris, Jones & Co., Philadelphia, for Plate Iron.

New-Jersey Exploring and Mining Company, for Zinc Ores, Iron (Franklinite) Ores, Smelting Process, &c.

Trenton Iron Co., New-Jersey, for Iron of fine quality, Ores &c.

Honorable Mention.—Adirondack Co., New-York, Cast Iron &c.

Morrel, Stewart & Co., Ohio, for Sheet Iron.

Morris, Jones & Co., Philadelphia, for Boiler Plate Iron.

Class II: Chemical Preparations, &c. *Prize Medal.*—Power & Weightman, Philadelphia, for Chemicals.

Honorable Mention.—Wetherill Brothers, Phil., Chemicals.

Class III: Substances used for Food. *Council Medal.*—Borden Gail, Jr., Texas, for Preparation of Meat Biscuit.

Prize Medals.—Barnes, W., Vermont, for Maple Sugar.

Bell, Thomas, Harlem, New-York, for Soule's Wheat.

Dean, L., Vermont, for Maple Sugar.

Dill & Mulcahey, Virginia, for Cavendish Tobacco.

Duffield, C., Louisville, Ky., for Hams.

Grant, J. H., Va., for Cavendish Tobacco.

Hecker & Brother, N. Y., for Flour from Genesee Wheat.

Herriott, E. T., South Carolina, for Carolina Rice.

Kirtland, B. B., Greenbush, N. Y., for Maize, 35 varieties.

New-York State Agricultural Society, for Collection of Wheats raised by Gen. Roswell Harmon, Wheatland, Monroe Co., N. Y.

Raymond & Schuyler, West Farms, N. Y., for Flour from Genesee Wheat.

Robinson, P., Va., for Cavendish Tobacco.

Schooley & Hough, Cincinnati, for Hams.

Honorable Mention.—Bridge, John, for Oil Cake.

Dominick, George, Ohio, for Lard,

Hecker & Brother, N. Y., for Farina.

Hotchkiss W., Lewiston, N. Y., for Soule's Wheat.,

Lee, James, & Co., Mass. for Oil Cake.

Mookler & Childs, Ohio, for Cavendish Tobacco.

Oswego Starch Factory, Oswego, N. Y., T. Kingsford & Sons manufacturers, for Fecula of Maize.

Oyler & Anderson, Va. for Cavendish Tobacco.

Thomas, James, for Cavendish Tobacco.

Thomas & Co., for Cavendish Tobacco.

White, M., New-Orleans, for Muscovado Sugar.

CLASS IV. VEGETABLE AND ANIMAL SUBSTANCES USED IN MANUFACTURES, &c.

Prize Medals.—Bond S., Tennessee, for Cotton.

Cockerill, Ten., for Wool.

Colegate & Co., N. Y., for Starch.

Hampton, W. S. C., for Cotton.

Hicks, George, for Tillandsia usnoïdes.

Holmes, G. L., Tenn., for Cotton.

Hotchkiss, H. G. & L. B., N. Y., for Oil of Peppermint.

Jones, J. R., S. C., for Cotton.

Jones, J. V., " forCotton.

Kimber, A. M., & Co., Penn. for Wool.

Macleod, W. W., S. C., for Cotton.

Maryland State, for Collection of Produce.

Merriwether, J. B., Alabama, for Cotton.

Nailor, J., Mississippi, for Cotton.

Oswego Starch Factory, Oswego, N. Y., T. Kingsford & Sons, for Starch.

Perkins & Brown, Ohio, for Wool.

Pope, J., Tenn., for Cotton.

Seabrook, W., S. C., for Cotton.

Strean, J. G., Penn., (entered by mistake in the name of J. H. Ewing,) for Wool.

Thompson, Rev. Z., Vt., for Woods.

Honorable Mention.—Dix, E. R., N. Y., for Flax, Hemp, &c.

Dominick, George, Ohio, for Lard Oil.
Emory, T., " "
Feutchwanger Dr. L., N. Y., for Bleached Shellac.
Frank, F., Ohio, for Lard Oil.
Goddard, L., for Whale Bone.
Holbrook & Stanly, Ohio, for Lard Oil.
Kitteridge, F. O., New Hampshire, for Corn-husk fiber.
Pell, R. J., New-York, for Woods.
Truesdale, Jacobs & Co., New-York, for Cotton.

Class 5. Carriages, &c. Childs, C. for a slide top Buggy.
Watson, G. W., Philadelphia, for Sporting Wagon.

Class 6. Manufacturing Machines and Tools. *Council Medal.*—
Dick, D., J. E. Holmes agent, New-York, for Anti-friction presses and Engineers tools.
Prize Medals.—LeRow & Blodget, New-York, for Rotary Sewing Machine.
Earl, T. K. & Co., Massachusetts, for Card Clothing.
Hayden, W., Connecticut, for Drawing Regulator for Cotton.
Lowell Machine Shop, (Massachusetts,) for Self-acting lathe and Power Loom.
Morey, C., Massachusetts, for Eastman's stone cutting machine.
Starr, Charles, New-York, for Book Binding Machine.
Woodbury, J. P., Massachusetts, for Wood Planing Machine.

Class 7. Civil Engineering, &c. *Prize Medal.* Iron Bridge Co., New-York, for Model of Rider's patent Iron Bridge.

Class 8. Naval Architecture, &c. Ordnance, Armor, &c.-
Prize Medals. National Institute, Washington, for Models of Ships of War and Merchant Vessels.
St. John, J. R., Buffalo, N. Y., for Nautical Compass, purporting to show the presence of any disturbing forces upon the needle: and to show the amount of the deflection resulting from these causes.

Honorable Mention.—Colt, Samuel, Connecticut, for Revolving Rifles and Pistols.

Palmer, W. R., New-York, for Target Rifle.

Robbins & Lawrence, Vermont, for Military Rifles

CLASS 9. AGRICULTURAL IMPLEMENTS, &c. *Council Medal.*—McCormick, C. H., Illinois, for Reaping Machine.

Prize Medal.—Prouty & Mears, Boston, Massachusetts, for Plow.

CLASS 10. PHILOSOPHICAL INSTRUMENTS, &c. *Council Medal.*—Bond, William & Son, Massachusetts, for the invention of a new mode of observing Astronomical phenomena, &c.

Prize Medals.—Bache, A. D., District Columbia, for Balances.

Brady, M. B., New-York, for Daguerreotypes.

Burt, W. A., Michigan, for Solar Compass, Surveying Instruments.

Ericcson, J., New-York, for Sea Lead, Pyrometer, &c.

Lawrence, M. M., New-York, for Daguerreotypes.

Whipple, J. A., Mass., for Daguerreotype of the Moon.

Honorable Mention.—Mayall, J. E.. for Photographs.

CLASS X. A. MUSICAL INSTRUMENTS.—*Prize Medals.*—Chickering, J., Massachusetts, for square Piano Forte.

Eisenbrant, C. H., Maryland, for Clarionettes and Flutes.

Gemunder, G., Mass., for a Violin, Joseph Guaruerius, (chiefly) and three other Violins and a Viola.

Meyer, C., Penn., for two Piano Fortes.

Nunns, R. & Clark, New-York, for 7 octave, square Piano Forte.

Honorable Mention.—Gilbert & Co., Mass., for Piano Forte with Æolian Attachment.

Goodyear, C., Conn., for the successful application of India Rubber, for the manufacture of a Flute.

Hews, C., Mass., for a square Piano Forte.

Pirsson, J., New-York, for a patent square Piano Forte.

Money Award.—Wood, J. S., Virginia, for the expenses incurred in constructing his Piano Violin, £50.

Class X. C. Surgical.—*Prize Medal.*—Palmer, B. F., Mass., for Artificial Leg.

Class XI, Cotton Goods. *Prize Medals.*—Amoskeag Manufacturing Co., Mass., for Drillings, Tickings, Sheetings and Cotton Flannels.

Willimantic Duck Manufacturing Co., Conn., for Cotton Sail Cloth.

Class XII, Woolen and Worsted. *Prize Medal.*—Gilbert & Stevens, Mass., for Flannels.

Honorable Mention.—Holden, B. T & D., Mass., for Blankets.

Class 15: Shawls, &c. *Prize Medal.*—Lawrence, Stone & Co., Massachusetts, for Tartans made from native wool.

Class 16: Leather, Harness, &c. *Prize Medals.*—Baker, J. B., Massachusetts, for Light Harness.

Crawford, A. M., Pennsylvania, for Calf skins tanned in oak.

Hickley & Tull, Pennsylvania, for two Portmanteaus.

Lacey & Phillips, Pennsylvania, for a Case of Harness.

Wisdom, Russell & Whitman, Ohio, for specimens curled hair for furniture.

Honorable Mention.—Adams, [illegible], New-York, for Portable Saddle.

Class 17: Paper, Printing, Book Binding. *Prize Medals.*—

Herrick, J. K., New-York, for Superior ruling of account books.

Howe, S. G., Massachusetts, for a System of characters, slightly angular in form, without capitals, for the blind.

Honorable Mention.—Bradley, Band & Co., Massachusetts, for Book cloth binding and Block gilding.

Gassett, H., Massachusetts, for Superior ruling of account books.

McAdams, J. & W., Massachusetts, for Ruled account books and circular ruling.

Sibell & Mott, New-York, for Specimens of account books.

Starr, C., New-York, for binding works for the Blind, with thickened margins to prevent the embossing from being pressed out.

Walker, E. & Co., New-York, for a Bible, elaborately bound and ornamented, with a recess for a family register inside the cover.

CLASS 19: CARPETS, &C. *Prize Medal.*—Albro & Hoyt, New Jersey, for Floor cloths.

Honorable Mention.—Lawrence, A. & A. & Co., Massachusetts, for Carpet.

CLASS 20: CLOTHING, SHOES, &C. *Prize Medals.*—Addington, W. H., Norfolk, for shoes for mining purposes.

Haight, Mrs. E., New-York, for a Shirt.

The workmen of Jeffers, W. H., New-York, for Ladies Boots and Shoes.

Honorable Mention.—Breed, N. A. & Co., Massachusetts, for Childrens' Shoes.

Jeffers, W. H., New-York, for collection of Boots and Shoes.

Milward James & Son, New-York, for Bonnets made of cotton braid.

CLASS 21: CUTLERY & EDGED TOOLS. *Prize Medals.*—Brown & Wells, Pennsylvania, for Tools.

North Wayne Scythe Company, Maine, for Scythes.

Simmons, D. & Co., New-York, for Edge Tools.

Honorable Mention.—A. B. Allen & Co., New-York, for Tools.

CLASS 22: IRON AND GENERAL HARDWARE. *Prize Medals.*—Adams & Co., Massachusetts, for Bank lock.

Arrowsmith, G. H., New-York, for Permutation Locks.

Chilson, Richardson & Co., Massachusetts, for Hot Air Furnace.

Cornelius & Co., Pennsylvania, for Chandeliers.

Day & Newell, New-York, for parautoptic permutating Locks, (with special approbation.)

Herring, S. C., New-York, for Salamander Safe

Howland, C., New-York, for Bell Telegraph.

McGregor & Lee, Ohio, for Bank Lock.

Honorable Mention.—Pond & Co., Massachusetts, for Cooking Stoves.

Class 26. *Prize Medal.*—Brooklyn Flint Glass Co., New-York, for Flint Glass.

Class 26: Furniture, &c. *Honorable Mention.*—Ragan, W., Pennsylvania, for Reclining-chair.

Class 27: *Honorable Mention.*—Maryland Soap Stone Company, for Articles made of Soap Stone.

Salt & Mear, Ohio, for Water Vase of fine brick clay.

Class 28: India Rubber and other Manufactures from animal and Vegetable Substances. *Council Medal.*—Goodyear, C., Connecticut, for India Rubber.

Prize Medals.—Fenn, J., New-York, for Ivory Combs.

Hayward Rubber Company, Connecticut, for India Rubber Shoes.

Loring, G., Massachusetts, for Water Pail.

Moulton, S. C., Massachusetts, for India Rubber Goods.

Pratt, Julius & Co., Connecticut, for Ivory veneer.

Class 29: Miscellaneous and small Wares. *Prize Medals.*—

Bazin Xavier & Co., Pennsylvania, for Fancy Soaps.

Hauel J., Pennsylvania, for Toilet Soaps.

Louderback, M. J., Ohio, for Preserved Peaches.

Maryland, State, for Collection of products.

St. John, J. R., Buffalo, New-York, for Soap.

Taylor, H. P. & W. C., Pennsylvania, for Toilet Soap

Class 30: Sculpture. *Prize Medal.*—Powers, Hiram, for Statue of Greek Slave, in Marble.

NEW-YORK.

His Excellency Governor Fish, In July, 1850, appointed the following gentlemen as a committee in behalf of the State of New-York, to examine and certify articles intended for exhibition in London.

Hon. LUTHER BRADISH, New-York.
Gen. ADONIRAM CHANDLER, New-York.
CHARLES HENRY HALL, Esq., "
EZRA P. PRENTICE, Esq., Albany.
BENJ. P. JOHNSON, Esq., "
Hon. ANTHONY VAN BERGEN, Coxsackie.
Hon. ZADOCK PRATT, Prattsville.
Hon. WILLIAM BUELL, Rochester.

The committee was organized on the 27th August, 1850, by the appointment of the Hon. LUTHER BRADISH, Chairman, and B. P. JOHNSON, Esq., Secretary. The committee were engaged for a number of weeks in the discharge of their duties, and examined several hundred articles offered for the exhibition. It is especially due to the chairman of the committee, Hon. Luther Bradish, to state, that it was owing to his unwearied efforts, that the entire list prepared from this State was arranged with so much care and attention, that it is believed no difficulty whatever occurred at the exhibition, in regard to articles that had passed through his hands. The labors of the committee were very much increased, by an order from Washington after the time for receiving entries as originally made, had expired, authorizing persons from other States, to make their entries through the New-York committee, of which a considerable number availed themselves. The chairman of the committee and Gen. Chandler, of New-York, had most of this labor imposed upon them.

NEW-YORK.

List of articles accepted by the Committee, and approved by the Central Authority at Washington.

Ambler & Avery, New-York, Dentistry.
Armstrong, S. T., do Air Pontoons.
Allcott, James, do Dentistry.
* Allen, George F., Utica, Telescopic Rifle.
† Adams, Henry, New-York, Portable Saddle.
American Chair Co., Troy, Chairs, Bedsteads and Railroad Seats.
† Allen, A. B. & Co. New-York, Agricultural Implements.
Atlantic Dock Mills, Brooklyn, Indian Meal, Flour, &c.
† Arrowsmith, George A., New-York, Jennings' Permutation lock.
† Adirondack Steel Co., do Steel, Iron and Iron Ore.
Brown, S. New-York, Body Brace Supporter.
† Brooklyn Flint Glass Co., Samples of Glassware.
† Bell, Thomas, Morrisania, Farm Products, Wheat, Rye, Oats, &c.
Blakeslee, Joseph, North Castle, Merino Wool in fleece.
Brown, Levi, Brooklyn, Gold Pens and Cases.
† Brady, M. B., New-York, Daguerreotypes.
Brady, D'Avignon & Co. New-York, Printing and Binding.
* Bullock, S. W. & J., New-York, Self operating Oil Press.
Benjamin, Joseph R., New-York, Elastic Trusses.
Brown, Solyman, New-York, Dentistry.
Brooks, Wm. T., New-York, Bell Telegraph.
Barton, Caleb D., Keesville, Iron Ore.
Blake, William, New-York, Mineral Fire Proof Paint.
Bourgard, Charles, New-York, Hair Work.
Boole, Leonard H., do Model Clipper Ship.
Borham, Frederick, New-York, Model of New-York Exchange. (Broken at Southampton.)
Bartholomew, J. H. New-York, Safety Valve Hydrant.
Barlow, Edward, do Dentistry.
Battey, Thomas, do Metallic Serving Mallets.

Baron, Brothers, New-York, Balance Fire Ladder and Escape.

Baron, Brothers, New-York, New application of blasts to furnaces.

Brady, W. N., New-York, "Kedge Anchor," a work on practical seamanship.

Buchman, John, New-York, view of New-York and Brooklyn.

Bidwell, Rev. W. H., New-York, Maps.

Brown & Lambert, New-York, Whitman's Patent Portable Bed.

Blind, Institution of the, New-York, Samples of work.

Chase, Miss Mary M., Chatham, Herbarium 300 N. Y. Plants.

Chevalier, John D., New-York, Dental Instruments.

Commerford & Redgate, New-York, Oak Chairs.

Cochran, J. W., N. Y., Brick Machine.

do. do. Bevel sawing and Stone dressing Machine.

Clark, Ralph, do. Oat Meal.

†Colegate, Wm., & Co., New-York, Pearl Starch.

Colton, J. H., New-York, Maps.

Chatain, Henry, do. Patent Machine Moldings.

Church & Chittenden, New-York, India Rubber Shoes.

Clerihugh, Van, New-York, Hair Work.

*Dean, Amos, & Co., Albany, Argillo Knobs &c

†Dix, E. R., Vernon, Farm Products.

Disturnell, J., New-York, Maps.

†Day & Newell, New-York, Parautoptic Permutating Locks &c.

Day, Horace H., New-York, India Rubber Shoes &c.

Dennington, C. L., do. Model of Floating Church.

D'Avignon, Francis, do. Lithographs.

†Dick, D., do. Anti Friction Presses.

*Emery & Co., Albany, Railroad Horse Power.

Evans, O. B., Buffalo, Daguerreotypes.

Eddy & Co., Union Village, Horse Power.

†Erricson, John, New-York, Enginery, Mechanism and Nautical Instruments.

Endicott & Co., New-York, Lithography.

Frisbie, M. J., New-York, India Rubber Shoes.

Finch, Hiram, Honeoye, Genesee Flour.

†Fenn, John, New-York, Ivory articles.

Fitch, Dr. Sam'l L., New-York, Plated Abdominal Supporters.

†Feutchwanger, Dr. Lewis, New-York, Minerals and Mineral Substances used in the arts &c.

Fox & Polhemus, New-York, Bolt of Cotton Duck.
Grant, A. T., Schaghticoke, Fanning Mill.
Goold, James, & Co., Albany, Pony Sleigh.
*Gavit D. E., New-York, Daguerreotypes.
Griffen, Daniel, New-York, Anti Friction Box for Railroads.
do. do. Model Steamboat Water Wheel, and Fuel-saving apparatus for Steam Boilers, &c.
Griffith, J. W., New-York, Model Ocean Steamer.
Godwin, Thomas, do. Enginery and Mechanism.
Genin, John N., do. Hats and Caps.
Gray, Dr. S., do. Artificial Eyes.
Gardner, J. N., Troy, Curry Combs.
Gibson, William, New-York, Stained Glass.
Gwynne, J. Stuart, do. Centrifugal Pump.
Hurst, James A., Albany, Preparation of Birds, &c.
Hotchkiss, Gideon, Windsor, Tram Block and Noddle Iron.
†Hecker & Brother, New-York, Genesee Flour, Farina, &c.
†Herring, Silas C., New-York, Iron Safe.
Hawes, G. E., New-York, Dentistry.
Hotchkiss & Prescott, Phelps, Indian Meal, kiln dried.
Hill, Cha's J. & Sons, Rochester, Genesee Flour.
Harmon, Anan, Clifton, Genesee Flour.
Hiler, Selah, New-York, Stair Rods, Type Distributor, &c.
Harrison, C. C., do. Daguerreotypes.
Higginbotham, L. C., Oneida, Miniature Steam Engine.
Hannington, W. J., New-York, Stained Glass.
Holmes, J. E., do. Ratchet Hoisting Machine.
Haskell, Merritt & Bull, New-York, Powdered Drugs.
Hill, John, New-York, Travelling Trunks.
Hanley, James, New-York, Improved Key and Railroad Catcher.
†Haight, Mrs. E., New-York, Shirt making.
†Howland, Charles, do. Bell Telegraph.
†Hotchkiss, H. G. & L. B., Lyons, Oil of Peppermint.
†Hotchkiss Wm., Lewiston, Soule's Wheat.
Jeffrey, Miss Agnes, Canandaigua, Painting Wild Flowers.

†Iron Bridge Co., New-York, Iron Bridge.

†Jeffers, W. H., do. Ladies French Shoes.

†Workmen of W. H. Jeffers, do do

Jennings, W. T. & Co., New-York, Coat and Pantaloons.

Jacot & Courvoisier, do. Watch.

†Kirtland, B. B., Greenbush, Indian Corn with its preparations for use.

Leask, Mrs. J., Albany, Needlework.

Leary & Co., New-York, Hats.

†Lawrence, M. M., New-York, Daguerreotypes.

Leach, M. S. & H. J , Lyons, Genesee Flour.

Lyon, Emanuel, New-York, Magnetic Powders.

Lathrop, J., Le Roy, Genesee Flour.

Lee, Wellington, New-York, Spathic Ore.

Lloyd, Lyman J., Albany, Single Harness, Trunks and Valises.

Low, Lynch & Co. New-York, Soap.

Learned & Thatcher, Albany, Stoves,

More, D. D. T., Watervliet, Corn Brooms.

†Millward, James & Son, New-York, White Pamela Bonnets.

Mawson, Brothers, New-York, Muff, Victorine and Wristlett's of American Fur.

Meade, Brothers, New-York, Daguerreotypes.

Macey, Josiah & Sons, New-York, Spermacetti and Sperm Candles.

McWeeney, Michael, New-York, Portable Parlor Green House.

Mott, C. A., Lansingburgh, Mineral Paint.

*Mix&Gardner, Schoharie, Model of a Wagon with improved axle.

Macey, Stanton & Co., New-York, Woolen Cassimeres.

† New-York State Agricultural Society, 35 varieties of Wheat, prepared by Gen. Roswell Harmon, Wheatland.

† Nunns & Clark, New-York, two Pianos.

† Oswego Starch Factory, Oswego, Starch and Pudding Starch.

Oliver, T., New-York, Tailors Transfers and Patterns.

Page, Ezekiel, New-York, Oars, Sweeps and Sculls.

Pratt, Zadock, Prattsville, Leather, Hemlock and Oak Tanned, and Lithography of Prattsville.

† Pirsson, James, New-York, Double Grand Action Piano Forte.

* Peters, T. C., Darien, Sack of fine Wool.

† Pell, Robert L., Pelham, American Woods.

Putnam, G P., New-York, Books and binding

Pooley, Samuel I., New-York, Fine Cutlery.

Pecare & Smith, New-York, Case of Colt's Pistols.

Phalon E., New-York, Hair Work.

* Pease, Richard H., Albany, Lithographs American Fruits.

* Parker & Brown, Utica, Bale Wool.

† Palmer, W. R. New-York, Target Rifle.

* Read, Charles A., Washington Mills, Fluted Fulling Mill.

Ross, Charles, Rochester, Fitzgerald Portable Grist Mills.

Rousseau, A. J., Troy, Essex Iron Ore.

Roy, W. L., New-York, Hebrew and English Dictionaries.

Rallings, Mrs. W., New-York, Millinery.

† Raymond & Schuyler, West Farms, Flour and Pearl Barley.

Rogers, James, New-York, Telegraph Register and Keys.

Smith, Leonard, Troy, 2 smut machines.

† Starr, Charles, New-York, 2 machines for Printing and Backing books.

† Starr, Charles, New-York, Bible for the Blind.

† St. John, John N., Buffalo, Self-determining Compass.

St. John, John N., do Aquatic Velocimeter, and Geered hand Log.

Starbuck, N. B., Troy, Fourteen Plows.

Sherman & Smith, New-York, Map United States.

Smead, Charles New-York, House's Printing Telegraph.

Simmons, Mrs. M., New-York, Millinery.

Spaulding, J., New-York, Silk Quilt.

† Sibell & Mott, do Bank Account Books.

Sperry, Henry, do Clock.

Stanson, David, do Penmanship.

Seaburry, J. & J. L., New York, Stove Polish

† Simmons, D. & Co., Cohoes, Edge Tools.

Stevens, Henry, New-York, Preserved Peaches.

Stevens & Co. Corrugated Boiler and Bridge and Excavator, by G. R. Montgomery.

Tuckerman, E. G., New-York, Model for tempering and straightening saws.

Tuckerman, E. G. New-York, Butterworth's Combination Lock.
Tuckerman, E. G. New-York, Air exhausted Coffin.
Thompson, Wm. M., New-York, Pictorial Book Binding Stamps.
Thornton, Mrs. Frances, New-York, Shirt and Laundry work.
Thompson, Sam. L., Setauket, Australian Wheat.
Tuph, John, New-York, Cane Chairs.
Tobit, John, H., New-York, combination Type.
† Truesdell, Jacobs & Co., New-York, Cotton.
* Wright, W. P & C. B., Rochester, Bevel Sawing Machine.
Wells, Levi, Rochester, Wheel Cultivator.
Woodcock, Frederick, Brooklyn, Oil Cloth.
Wood, Tomlinson & Co., New-York, Sporting Wagon.
† Walker, Edward & Co., New-York, specimens of Binding (Bible.)

The following entries, from this State, were made at the Palace in London, after the Exhibition was opened.

Adams, N., New-York, Brick Making Machine.
Anthony, C. J., New-York, Breech Loading Gun.
Andrews, H. Q., Townsends' Sarsaparilla.
Burch, L. D., Waterville, Cooking Stove, Air Tight.
Beach, Brothers, New-York, cheap American newspapers.
Beach, W., New-York, Books on Botany.
Brainard, C. H., New-York, Daguerreotypes of Presidents of the United States.
Browning, William, drawing of engine, steamer "Pacific."
Commerford & Redgate, New-York, light cane Chairs.
Campbell, S., New-York, a Lapping Machine.
Dusphin J. E., Self-adjusting Churn.
Dawson, George, Albany, file New-York State Newspapers.
Eddy, G. W. & Co., Waterford, Patent, toughened metallic railway wheels.
Francis, J., New-York, rowing boat of Spanish Cedar.
Forrest, R., New-York, shirts.
Howe, David W., New-York, Townsend's Sarsaparilla.
† Herrick, J K., New-York, Account Books.
Hyde, J. J., New-York, Axle-Tree.

Harris, —— Waterville, Patent Paint Mills.

LeRoy & Co., New-York, Tin pipes made by Hydraulic pressure.

† Lerow & Blodget, New-York, Sewing Machin

Mahony, —— Barrel Beef.

Miles, Pliny, New-York, Gold and Silver Coins.

Miller, John E., New-York, New Orleans Moss.

Nicholson, A., New-York, Table Cover.

Oliver, F., New-York, Apparatus for measuring.

Prosser, T., New-York, Model machine for rolling Tin.

Prosser, T. & Sons, New-York, Model Horse Power and other machines.

Roy, James & Co., West Troy, Woolen Shawls from Merino Wool.

Ross, G., New-York, India Rubber Shoes.

Rodgers, S, H., New-York, Velocipedes.

Shearman, E. S., New-York, Lard Oil.

Smith, J. M. & Co., New-York, Barrel Beef.

† St. John, J. R., Buffalo, Caldwell, Payson & Cos., "Excelsior Soap."

Tyler, P. B., New-York, Railway Switch and Water Guage.

Willard, Mrs. Emma, Troy, Chronological Charts, &c.

Whipple, J. E., West Troy, Lard Oil.

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* Several of the articles entered were not sent to the Exhibition, and are noted with a * as far as recollected.

† Prizes awarded or Honorable Mention given.

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